The Forum.

MARCH, 1893.

HAWAII AND OUR FUTURE SEA-POWER.

THE suddenness—so far, at least, as the general public is concerned—with which the long-existing troubles in Hawaii have come to a head, and the character of the advances reported to be addressed to the United States by the revolutionary government, formally recognized as *de facto* by our representative on the spot, add another to the many significant instances furnished by history that, as men in the midst of life are in death, so nations in the midst of peace find themselves confronted with unexpected causes of dissension, conflicts of interests, whose results may be, on the one hand, war, or, on the other, abandonment of clear and imperative national advantage in order to avoid an issue for which preparation has not been made. By no premeditated contrivance of our own, by the cooperation of a series of events which, however dependent step by step upon human action, were not intended to prepare the present crisis, the United States finds herself compelled to answer a question—to make a decision—not unlike and not less momentous than that required of the Roman senate when the Mamertine garrison invited it to occupy Messina and so to abandon the hitherto traditional policy which had confined the expansion of Rome to the Italian peninsula. For let it not be overlooked that, whether we wish or no, we *must* answer the question, we *must* make the decision. The issue cannot be dodged. Absolute inaction in such a case is a decision as truly as the most vehement action. We can now advance, but, the conditions of the world being what they are, if we do not advance we recede; for there is involved

Copyright, 1892, by the Forum Publishing Company.

not so much a particular action as a question of principle pregnant of great consequences in one direction or in the other.

Occasion of serious difficulty should not, indeed, here arise. Unlike the historical instance just cited, the two nations that have now come into contact are so alike in inherited traditions, habits of thought, and views of right, that injury to the one need not be anticipated from the predominance of the other in a quarter where its interests also predominate. Despite the heterogeneous character of the immigration which the past few years have been pouring into our country, our political traditions and racial characteristics still continue English—Mr. Douglas Campbell would say Dutch, but the stock is the same. Though thus somewhat gorged with food not wholly to its taste, our political digestion has so far contrived to master the incongruous mass of materials it has been unable to reject; and, if assimilation has been at times imperfect, the political constitution and spirit remain English in essential features. Imbued with like ideals of liberty, of law, of right, certainly not less progressive than our kin beyond sea, we are, in the safeguards deliberately placed around our fundamental law, even more conservative than they. That which we received of the true spirit of freedom we have kept—liberty and law—not the one or the other, but both. In that spirit we have not only occupied our original inheritance, but also, step by step, as Rome incorporated the other nations of the peninsula, we have added to it, spreading and perpetuating everywhere the same foundation principles of free and good government which, to her honor be it said, Great Britain also has throughout her course maintained. And now, arrested on the south by the rights of a race wholly alien to us, and on the north by a body of states of like traditions to our own, whose freedom to choose their own affiliations we respect, we have come to the sea. In our infancy we bordered upon the Atlantic only; our youth carried our boundary to the Gulf of Mexico; to-day maturity sees us upon the Pacific. Have we no right or no call to progress farther in any direction? Are there for us beyond the sea-horizon none of those essential interests, of those evident dangers, which impose a policy and confer rights?

This is the question that has long been looming upon the brow of a future now rapidly passing into the present. Of it the Hawaiian incident is a part—intrinsically, perhaps, a small part—but in its relations to the whole so vital that, as has before been said, a wrong decision does not stand by itself, but involves, not only in principle

but in fact, recession along the whole line. In our natural, necessary, irrepressible expansion, we are here come into contact with the progress of another great people, the law of whose being has impressed upon it a principle of growth which has wrought mightily in the past and in the present is visible by recurring manifestations. Of this working, Gibraltar, Malta, Cyprus, Egypt, Aden, India, in geographical succession though not in strict order of time, show a completed chain; forged link by link, by open force or politic bargain, but always resulting from the steady pressure of a national instinct, so powerful and so accurate that statesmen of every school, willing or unwilling, have found themselves carried along by a tendency which no individuality can resist or greatly modify. Unsubstantial rumor and incautious personal utterance have each suggested an impatient desire in Mr. Gladstone to be rid of the occupation of Egypt; but scarcely has his long exclusion from office ended than the irony of events signalizes his return thereto by an increase in the force of occupation. It may further be profitably noted, of the chain just cited, that the two extremities were first possessed—first India, then Gibraltar, far later Malta, Aden, Cyprus, Egypt—and that, with scarce an exception, each step has been taken, despite the jealous vexation of a rival. Spain has never ceased angrily to bewail Gibraltar. "I had rather," said the first Napoleon, "see the English on the heights of Montmartre than in Malta." The feelings of France about Egypt are matter of common knowledge, not even dissembled; and, for our warning be it added, her annoyance is increased by the bitter sense of opportunity rejected.

It is needless to do more than refer to that other chain of maritime possessions—Halifax, Bermuda, Santa Lucia, Jamaica—which strengthen the British hold upon the Atlantic, the Caribbean, and the Isthmus of Panama. In the Pacific the position is for them much less satisfactory—nowhere, perhaps, is it less so, and from obvious natural causes. The commercial development of the eastern Pacific has been far later and is still less complete than that of its western shores. The latter when first opened to European adventure were already the seat of ancient civilizations, in China and Japan, furnishing abundance of curious and luxurious products to tempt the trader by good hopes of profit. The western coast of America, for the most part peopled by savages, offered little save the gold and silver of Mexico and Peru, and these were jealously monopolized by the Spaniards—not a commercial nation—during their long ascendency. Being so very far from Eng-

land and affording so little material for trade, Pacific America did not draw the enterprise of a country the chief and honorable inducement of whose seamen was the hope of gain, in pursuit of which they settled and annexed point after point in the regions where they penetrated and upon the routes leading thither. The western coasts of North America, being reached only by the long and perilous voyage around Cape Horn, or by a more toilsome and dangerous passage across the continent, remained among the last of the temperate productive seaboards of the earth to be possessed by white men. The United States were already a nation, in fact as well as in form, when Vancouver was exploring Puget Sound and passed first through the channel separating the mainland of British America from the island that now bears his name. Thus it has happened that, from the late development of British Columbia in the northeastern Pacific and of Australia and New Zealand in the southwestern, Great Britain is again found holding the two extremities of a line between which she must inevitably desire the intermediate links; nor is there any good reason why she should not have them, except the superior, more urgent, more vital necessities of another people—our own. Of these links the Hawaiian group possesses unique importance—not from its intrinsic commercial value, but from its favorable position for maritime and military control.

The military or strategic value of a naval position depends upon its situation, upon its strength, and upon its resources. Of the three, the first is of most consequence, because it results from the nature of things; whereas the two latter, when deficient, can be artificially supplied, in whole or in part. Fortifications remedy the weaknesses of a position, foresight accumulates beforehand the resources which nature does not yield on the spot; but it is not within the power of man to change the geographical situation of a point which lies outside the limit of strategic effect. It is instructive, and yet apparent to the most superficial reading, to notice how the first Napoleon, in commenting upon a region likely to be the scene of war, begins by considering the most conspicuous natural features, and then enumerates the commanding positions, their distances from each other, the relative directions, or, as the sea phrase is, their "bearings," and the particular facilities each offers for operations of war. This furnishes the ground plan, the skeleton, detached from confusing secondary considerations, and from which a clear estimate of the decisive points can be made. The number of such points varies greatly, according to the character of the region. In a mountainous, broken country they may be very

many; whereas in a plain devoid of natural obstacles there may be few or none save those created by man. If few, the value of each is necessarily greater than if many, and if there be but one its importance is not only unique, but extreme—measured only by the size of the field over which its unshared influence extends.

The sea, until it approaches the land, realizes the ideal of a vast plain unbroken by obstacles. On the sea, says an eminent French tactician, there is no field of battle; meaning that there is none of the natural conditions which determine, and often fetter, the movements of the general. But upon a plain, however flat and monotonous, causes, possibly slight, determine the concentration of population into towns and villages, and the necessary communications between the centres create roads. Where the latter converge, or cross, tenure confers command, depending for importance upon the number of routes thus meeting and upon their individual value. It is just so at sea. While in itself the ocean opposes no obstacle to a vessel taking any one of the numerous routes that can be traced upon the surface of the globe between two points, conditions of distance or convenience, of traffic or of wind, do prescribe certain usual courses. Where these pass near an ocean position, still more where they use it, it has an influence over them, and where several routes cross near by that influence becomes very great—is commanding.

Let us now apply these considerations to the Hawaiian group. To any one viewing a map that shows the full extent of the Pacific Ocean, with its shores on either side, two circumstances will be strikingly and immediately apparent. He will see at a glance that the Sandwich Islands stand by themselves, in a state of comparative isolation, amid a vast expanse of sea; and, again, that they form the centre of a large circle whose radius is approximately—and very closely—the distance from Honolulu to San Francisco. The circumference of this circle, if the trouble is taken to describe it with compass upon the map, will be seen, on the west and south, to pass through the outer fringe of the system of archipelagoes which, from Australia and New Zealand, extend to the northeast toward the American continent. Within the circle, a few scattered islets, bare and unimportant, seem only to emphasize the failure of nature to bridge the interval separating Hawaii from her peers of the southern Pacific. Of these, however, it may be noted that some, like Fanning and Christmas Islands, have within a few years been taken into British possession. The distance from San Francisco to Honolulu, twenty-one hundred

miles—easy steaming distance—is substantially the same as that from Honolulu to the Gilbert, Marshall, Samoan, Society, and Marquesas groups, all under European control, except Samoa, in which we have a part influence.

To have a central position such as this, and to be alone, having no rival and admitting no alternative throughout an extensive tract, are conditions that at once fix the attention of the strategist—it may be added, of the statesmen of commerce likewise. But to this striking combination is to be added the remarkable relations borne by these singularly placed islands to the greater commercial routes traversing this vast expanse known to us as the Pacific—not only, however, to those now actually in use, important as they are, but also to those that must necessarily be called into being by that future to which the Hawaiian incident compels our too unwilling attention. Circumstances, as was before tritely remarked, create centres, between which communication necessarily follows; and in the vista of the future all, however dimly, discern a new and great centre that must greatly modify existing sea-routes, as well as bring new ones into existence. Whether the canal of the Central American isthmus be eventually at Panama or at Nicaragua matters little to the question now in hand, although, in common with most Americans who have thought upon the subject, I believe it will surely be at the latter point. Whichever it be, the convergence there of so many ships from the Atlantic and the Pacific will constitute a centre of commerce, interoceanic and inferior to few, if to any, in the world; one whose approaches will be jealously watched and whose relations to the other centres of the Pacific by the lines joining it to them must be carefully examined. Such study of the commercial routes and their relations to the Hawaiian Islands, taken together with the other strategic considerations previously set forth, completes the synopsis of facts which determine the value of the group for conferring either commercial or naval control.

Referring again to the map, it will be seen that while the shortest routes from the Isthmus to Australia and New Zealand, as well as those to South America, go well clear of any probable connection with or interference from Hawaii, those directed toward China and Japan pass either through the group or in close proximity to it. Vessels from Central America bound to the ports of Northern America come, of course, within the influence of our own coast. These circumstances and the existing recognized distribution of political power

in the Pacific point naturally to an international acquiescence in certain defined spheres of influence, for our own country and for others, such as has already been reached between Great Britain, Germany, and Holland in the southwestern Pacific, to avoid conflict there between their respective claims. Though artificial in form, such a recognition would, in the case here suggested, depend upon perfectly natural as well as indisputable conditions. The United States is by far the greatest, in numbers, interests, and power, of the communities bordering upon the North Pacific; and the relations of the Hawaiian Islands to her naturally would be, and actually are, more numerous and more important than they can be to any other state. This is true, although, unfortunately for the equally natural wishes of Great Britain and her colonies, the direct routes from British Columbia to Eastern Australia and New Zealand, which depend upon no building of a future canal, pass as near the islands as those already mentioned. Such a fact, that this additional great highway runs close to the group, both augments and emphasizes their strategic importance; but it does not affect the statement just made that the interest of the United States in them is greater than that of Great Britain, and dependent upon a natural cause, nearness, which has always been admitted as a reasonable ground for national self-assertion. It is unfortunate, doubtless, for the wishes of British Columbia and for the communications, commercial and military, depending upon the Canadian Pacific Railway, that the United States lies between them and the South Pacific and is the state nearest to Hawaii; but, the fact being so, the interests of our sixty-five million people, in a position so vital to our *rôle* in the Pacific, must be allowed to outweigh those of the six millions of Canada.

From the foregoing considerations may be inferred the importance of the Hawaiian Islands as a position powerfully influencing the commercial and military control of the Pacific, and especially of the northern Pacific, in which the United States, geographically, has the strongest right to assert herself. These are the main advantages, which can be termed positive: those, namely, which directly advance commercial security and naval control. To the negative advantages of possession, by removing conditions which, if the islands were in the hands of any other power, would constitute to us disadvantages and threats, allusion only will be made. The serious menace to our Pacific coast and our Pacific trade, if so important a position were held by a possible enemy, has been frequently mentioned in the

press and dwelt upon in the diplomatic papers which are from time to time given to the public. It may be assumed that it is generally acknowledged. Upon one particular, however, too much stress cannot be laid, one to which naval officers cannot but be more sensitive than the general public, and that is the immense disadvantage to us of any maritime enemy having a coaling-station well within twenty-five hundred miles, as this is, of every point of our coast-line from Puget Sound to Mexico. Were there many others available we might find it difficult to exclude from all. There is, however, but the one. Shut out from the Sandwich Islands as a coal base, an enemy is thrown back for supplies of fuel to distances of thirty-five hundred or four thousand miles—or between seven thousand and eight thousand, going and coming—an impediment to sustained maritime operations well-nigh prohibitive. The coal-mines of British Columbia constitute, of course, a qualification to this statement; but upon them, if need arose, we might at least hope to impose some trammels by action from the land side. It is rarely that so important a factor in the attack or defence of a coast-line—of a sea-frontier—is concentrated in a single position, and the circumstance renders doubly imperative upon us to secure it, if we righteously can.

It is to be hoped, also, that the opportunity thus thrust upon us may not be narrowly viewed, as though it concerned but one section of our country or one portion of its external trade or influence. This is no mere question of a particular act, for which, posssibly, just occasion may not yet have offered; but of a principle, a policy, fruitful of many future acts, to enter upon which, in the fulness of our national progress, the time has now arrived. The principle accepted, to be conditioned only by a just and candid regard for the rights and reasonable susceptibilities of other nations—none of which is contravened by the step here immediately under discussion—the annexation, even, of Hawaii would be no mere sporadic effort, irrational because disconnected from an adequate motive, but a first-fruit and a token that the nation in its evolution has aroused itself to the necessity of carrying its life—that has been the happiness of those under its influence—beyond the borders that have heretofore sufficed for its activities. That the vaunted blessings of our economy are not to be forced upon the unwilling may be conceded; but the concession does not deny the right nor the wisdom of gathering in those who wish to come. Comparative religion teaches that creeds which reject missionary enterprise are foredoomed to decay. May it not be so with nations? Certainly

the glorious record of England is consequent mainly upon the spirit and traceable to the time when she launched out into the deep—without formulated policy, it is true, or foreseeing the future to which her star was leading, but obeying the instinct which in the infancy of nations anticipates the more reasoned impulses of experience. Let us, too, learn from her experience. Not all at once did England become the great sea power which she is, but step by step, as opportunity offered, she has moved on to the world-wide preëminence now held by English speech and by institutions sprung from English germs. How much poorer would the world have been had Englishmen heeded the cautious hesitancy that now bids us reject every advance beyond our shore-lines! And can any one doubt that a cordial, if unformulated, understanding between the two chief states of English tradition, to spread freely, without mutual jealousy and in mutual support, would greatly increase the world's sum of happiness?

But if a plea of the world's welfare seem suspiciously like a cloak for national self-interest, let the latter be frankly accepted as the adequate motive which it assuredly is. Let us not shrink from pitting a broad self-interest against the narrow self-interest to which some would restrict us. The demands of our three great sea-boards, the Atlantic, the Gulf, and the Pacific—each for itself, and all for the strength that comes from drawing closer the ties between them—are calling for the extension, through the Isthmian Canal, of that broad sea-common along which, and along which alone, in all the ages prosperity has moved. Land-carriage, always restricted and therefore always slow, toils enviously but hopelessly behind, vainly seeking to replace and supplant the royal highway of Nature's own making. Corporate interests, vigorous in that power of concentration which is the strength of armies and of minorities, may here for a while withstand the ill-organized strivings of the multitude, only dimly conscious of its wants; yet the latter, however temporarily opposed and baffled, is sure at last, like the blind forces of nature, to overwhelm all that stand in the way of its necessary progress. So the Isthmian Canal is an inevitable part in the future of the United States; yet scarcely an integral part, for it cannot be separated from other necessary incidents of a policy dependent upon it, whose details cannot be exactly foreseen. But because the precise steps that may hereafter be opportune or necessary cannot yet be certainly foretold, is not a reason the less, but a reason the more, for establishing a principle of action which may serve to guide as opportunities arise. Let us start from the funda-

mental truth, warranted by history, that the control of the seas, and especially along the great lines drawn by national interest or national commerce, is the chief among the merely material elements in the power and prosperity of nations. It is so because the sea is the world's great medium of circulation. From this necessarily follows the principle that, as subsidiary to such control, it is imperative to take possession, when it can righteously be done, of such maritime positions as contribute to secure command. If this principle be adopted, there will be no hesitation about taking the positions—and they are many—upon the approaches to the Isthmus, whose interests incline them to seek us. It has its application also to the present case of Hawaii.

There is, however, one caution to be given from that military point of view beyond the need of which the world has not yet passed. Military positions, fortified posts, by land or by sea, however strong or admirably situated, do not by themselves confer control. People often say that such an island or harbor will give control of such a body of water. It is an utter, deplorable, ruinous mistake. The phrase may indeed by some be used only loosely, without forgetting other implied conditions of adequate protection and adequate navies; but the confidence of our own nation in its native strength, and its indifference to the defence of its ports and the sufficiency of its fleet, give reason to fear that the full consequences of a forward step may not be soberly weighed. Napoleon, who knew better, once talked this way. "The islands of San Pietro, Corfu, and Malta," he wrote, "will make us masters of the whole Mediterranean." Vain boast! Within one year Corfu, in two years Malta, were rent away from the state that could not support them by its ships. Nay, more: had Bonaparte not taken the latter stronghold out of the hands of its degenerate but innocuous government, that citadel of the Mediterranean would perhaps—would probably—never have passed into those of his chief enemy. There is here also a lesson for us.

It is by no means logical to leap, from this recognition of the necessity of adequate naval force to secure outlying dependencies, to the conclusion that the United States would for that object need a navy equal to the largest now existing. A nation as far removed as is our own from the bases of foreign naval strength may reasonably reckon upon the qualification that distance—not to speak of the complex European interests close at hand—impresses upon the exertion of naval strength. The mistake is when our remoteness, unsupported by

carefully calculated force, is regarded as an armor of proof, under cover of which any amount of swagger may be safely indulged. Any estimate of what is an adequate naval force for our country may properly take large account of the happy interval that separates both our present territory and our future aspirations from the centres of interest really vital to European states. If to these safeguards be added, on our part, a sober recognition of what our reasonable sphere of influence is and a candid justice in dealing with foreign interests within that sphere, there will be little disposition to question our preponderance therein.

Among all foreign states, it is especially to be hoped that each passing year may render more cordial the relations between ourselves and the great nation from whose loins we sprang. The radical identity of spirit which underlies our superficial differences of polity will surely so draw us closer together, if we do not wilfully set our faces against a tendency which would give our race the predominance over the seas of the world. To force such a consummation is impossible, and if possible would not be wise; but surely it would be a lofty aim, fraught with immeasurable benefits, to desire it, and to raise no needless impediments by advocating perfectly proper acts, demanded by our evident interests, in offensive or arrogant terms.

A. T. MAHAN.

PANAMA: THE STORY OF A COLOSSAL BUBBLE.

In 1880, on the day set for the initial ceremonies of the Panama Canal work, a little flag-bedecked vessel steamed out from the harbor of Panama with Count Ferdinand de Lesseps and an illustrious company on board, bound for La Boca, the point on the Pacific shore of the Isthmus at which the canal was to emerge. Through some miscalculation the steamer was delayed in arriving until after the tide had begun its rapid fall. The eminent voyagers eyed the shore wistfully and looked at one another in consternation as the captain vainly essayed to land them among the rocks. La Boca flags beaconed encouragingly from the spot where the veteran "piercer of continents" was to turn the first shovelful of earth; but the tide continued to fall and the distance to the shore increased. In this dilemma the versatile leader proved his brilliant fertility of resource. Uncovering his silvery locks, he addressed a felicitous harangue to his companions, called for a spade, and turned on the steamer's deck an imaginary Isthmian clod. Then champagne was opened, everybody cheered, and the little steamer swung about and sailed away gayly with fluttering banners. In January, 1893, when his doom had been practically sealed by disclosures hardly paralleled in this or any other century, police agents visited the French mansion of this same man with a legal summons. Aged and infirm, he arose from a sick-bed, called for his cross of the Legion of Honor, clasped it theatrically to his breast, and fell back fainting. These two incidents accurately typify the real spirit that has governed, from first to last, the conduct of the most tremendous engineering feat of modern times, beside which, as its history shows, the cutting of the Mont Cenis Tunnel or the Suez Canal was mere child's play.

M. de Lesseps' indefatigable predecessor with the Darien project, it is not perhaps generally known, if not its real initiator, was an American, Frederick M. Kelley, of New York, who should never be lost sight of in posterity's ultimate award. Before even the Suez Canal was attempted, Kelley had begun to wander up and down, from country to country and capital to capital, like Columbus with a new

route to the East in his brain, striving to enlist sympathy in his fascinating scheme for saving millions of dollars annually to commerce and shortening the ocean journey by many thousands of miles. As early as 1852, when only twenty-eight years old, Kelley, then a Wall Street banker, became sole owner of the Colombian concession subsequently transferred to French hands. Within three years he had accompanied or dispatched three expeditions to search for a depression in the Cordillera barrier that should enable him to utilize the Isthmian rivers running southward in an artificial waterway to be continued thence by a short cut to the Pacific shore. Armed with maps and plans, he secured a respectful hearing from President Pierce and Jefferson Davis, then Secretary of War, who, however, lacked funds to order a government survey. In Europe, Humboldt and Robert Stephenson encouraged him; the British Institution of Civil Engineers voted him a gold medal for a paper "demonstrating the feasibility of uniting the two oceans by a canal without locks"; and Napoleon III. even offered to make a survey at France's expense, after Kelley had unfortunately compromised himself with the English. In 1857 President Buchanan did order a government expedition, which returned in 1858, one officer reporting favorably, another adversely. With the outbreak of the Rebellion, Kelley's concession expired and he withdrew impoverished from the struggle. But in 1863, when the San Blas route was talked of, his old interest blazed up anew; he talked over wealthy friends and was instrumental in the dispatch of two other expeditions. It was not until 1875 that De Lesseps, who had met Kelley years before in London, organized his Isthmian exploring society and inaugurated the movement that culminated in the International Canal Congress of 1879 and the adoption of a route specifically condemned by the most competent experts.

Flushed with the merited success of his great Suez achievement, just then beginning to confound all augury, M. de Lesseps was in a position to engage enthusiastic public support in any effort to blow the airiest of bubbles. Goethe's Nineteenth-century dream of canals at Suez and Panama and linking the Rhine and the Danube, he had realized as to the first particular; why should he not do so as to the second? The very croakings against Suez of incredulous statesmen and engineers, from Palmerston and Stephenson down, he was ready to cite in defence of a new undertaking. The favorite taunt of his English enemies, that he was "no engineer, but a mere diplomatist," he met with the same refutation. Nothing else in his record, to be

sure, sustained him. It was not as an engineer that he began his Tunis apprenticeship; in Algeria, Madrid, Rome, and Alexandria impugners of his diplomacy never excused him on technical grounds. Even at Suez, what M. Léon Say has called his genius for "unravelling the future of international relations," coupled with the adroit distribution of backsheesh and the propitiation of a willing and unscrupulous potentate, undoubtedly won him success where the very Cæsar of engineers might quickly have buried his hopes in the desert sands. Certainly the calling of the Canal Congress, to extricate himself from the disagreeable responsibility of choosing expertly between five routes and eight competing propositions, was not the device of one who had reasoned out to its minutest detail the masterly solution of a great practical problem. Thus, indeed, at the outset a crumbling foundation was laid for the ambitious structure that has now so disastrously collapsed.

Exactly what he knew personally of the precise nature of the task before him it is not now difficult to estimate. When the Congress met he was said to regard the elements requisite to a practicable canal as, 1, no locks; 2, good harbors; 3, the avoidance of other than tidal rivers—conditions, in effect, duplicating those at Suez. In the Congress it was positively decided that no canal with locks could accommodate a traffic sufficiently large to yield an adequate revenue; and when, at the closing session, by a vote of 78 to 8, 12 abstaining, the Congress formally declared in favor of the present route, it was understood that adherence to the Suez model and the accommodation of future great vessels, rather than immediate commercial profit from existing opportunities, were the governing considerations. As a third element of weakness, it may be noted that the stipulations in the concession to Lieutenant Wyse, approved by President Parra, of Colombia, in 1878, were not uniformly favorable; nor were its advantages adequately improved. While granting the right of construction for ninety-nine years from the date the canal was opened, it required the international commission to decide the route not later than 1881. The grantees were then to form within two years a construction company, finishing the canal within another twelve years or forfeiting all rights, together with the work accomplished and all but the movable plant. The President of Colombia was authorized (not required) to grant a maximum extension of six years "if, in an extreme case, beyond the control of the company, and after one-third part of the canal is complete, they should recognize the impossibility of finishing it in twelve

years." Not a word was said concerning recovery or indemnification in case of failure before the specified proportion was completed. M. Wyse, no doubt, whose experience has been little more fortunate than Kelley's, never anticipated such a contingency or dreamed of the bungling indiscretion that was to link his name with the most colossal failure of the time.

The inherent absurdity of the Suez parallel was, however, always manifest. While the Suez Canal was still "in the air," Kelley confessed frankly to Stephenson that he believed it more feasible than his own project, the Suez route lying in a dry, healthy climate and traversing a flat country teeming with cheap workmen, while the Darien Isthmus was afflicted with the "hottest, wettest, and unhealthiest climate in the world, where labor must be transported to the ground." Even at Suez plans and performances did not mathematically correspond. M. de Lesseps boasts that that waterway was opened by the time appointed; but this was at a depth of only six instead of eight metres, while the cost was nearly double the original estimate. These facts, and the lack at Panama of a horde of slavish fellaheen workmen and of a subservient taskmaster like the Khedive, should have prevented him from duping his supporters. Add to these the difference between severing a neck of soft sand at Suez, which involved mere persistence with scoops and shovels, and the formidable mountain-wall at Panama, with the serious accessory obstacles of miasma, jungles, swamps, and torrents, and it becomes a question whether he ever entirely succeeded in duping himself. At Suez, in a word, every facility was at hand for accomplishing a comparatively easy task; at Panama, for one immensely more difficult, every facility was lacking. Yet M. de Lesseps, like a true child, not of the Republic, but of the Third Empire, plunged blindly ahead, with as reckless a disregard for others as the "Man of December" when he forced the French army to the frontier in a state of unreadiness that dismayed those most confident of its invincible spirit.

On March 3, 1880, three years before the concession demanded, a construction company was organized. On June 30 M. de Lesseps formally invited the public to admire the prismatic beauty of the bubble he had succeeded in floating. His agents, already primed with assurances that the canal would be completed in 1888, dazzled timorous investors with excessive tonnage estimates. From the first, money that should have been spent on the work was used to suppress the truth about it. Lying circulars were issued; Paris and Panama news-

papers were muzzled with gold. The entire capital, it was announced, had been placed at 600,000,000 francs. Seventy engineers, superintendents, and doctors had been sent to the Isthmus; steam-engines had been ordered and 8,000 negroes would follow. From seventy-three to seventy-five million metres only of earth and rock would have to be removed, at the (reduced) estimated cost of 512,000,000 francs. Before the end of the year work would be begun all along the line. Beholding, in imagination, ships already gliding tranquilly from ocean to ocean, the enthusiastic leader waived the formality of exhaustive preliminary surveys. Contracts were farmed out right and left, on ruinous terms, in many cases to utterly irresponsible speculators. Ship-loads of machinery were hurried off and dumped at Colon; engineers were sent out who were no engineers, workmen whose sole industry was leisure. It used to be said that every sleeper of the Panama Railroad was a coffin; it looked at first as though all the earth taken from the canal might hardly make room for its victims. For the first few months nearly all hands were busy erecting hospitals; doctors and nurses constituted always a considerable part of the working force. Construction railroads were built and the existing line purchased; the swamp to the north of Colon was filled in, a town built at a cost of $5,000,000, and costly offices erected, including a commodious white house for the illustrious president, who has occupied it twice in twelve years. The labor problem became immediately embarrassing. Actual digging, it was found, was impossible for white men. A committee of the Congress had recommended the employment of negroes from the Bahamas and the West Indies, and these were hired in droves, on a commission of ten dollars a head to agents, with many expensive stipulations as to passage, food, and shelter. But beside the uncoerced Jamaica negro the average Alabama field-hand is a miracle of industry. Lacking a Mohammed Said, the work might easily have taken fifty years. Not that the white officers were consumed with zeal. The deadly miasma arising from the upturned earth increased the natural unhealthiness of the locality. The death-rate was soon appalling—at one period, eighty-three per cent during five months among the chief officials. These constant fatalities deranged contracts, entangled accounts, and prevented the maturing and execution of plans. Hundreds of new-comers died before they were broken in. A regular vacation-list for Europeans was established, and the hospitals were always full. Solid rock was found to underlie the Atlantic swamps. Every heavy rain

swelled the mountain streams to roaring torrents, which choked ditches and washed away embankments as fast as they were constructed.

Yet all this only stimulated the directors' ardor. In 1885, when M. de Lesseps was still convincing stockholders that the canal would be finished by 1888, visitors found the state of affairs on the Isthmus almost incredible. After five years of work, shallow inlets on either shore, a great scratch in the rock from Colon to Panama, and the white posts of the surveyors represented all the progress made. The Culebra Mountain, three hundred feet high, towered above the canal level, looking as immovable as Mont Blanc. Whistling gangs of negroes flourished spades and picks lazily only when the overseer was near. Section-bosses loitered about, surly and perspiring, under their great umbrellas. Chiefs lounged on the verandas of model bungalows, fitted with every sanitary convenience and pitched on the unhealthiest spots in the neighborhood, absorbing absinthe and speculating between the relative undesirability of bilious fever, remittent fever, Chagres fever, yellow fever, and fever and ague. Contractors quarelled and kept the company's hands at a standstill. At the main offices, red tape and official bumbledom hampered the dispatch of business. The Director-General kept the whole machine waiting while he countersigned shower-bath tickets. The cashier shovelled out napoleons over his counter to merchants and favorites at a premium of nineteen per cent when the current rate was forty—a gratuitous accommodation that must have cost the company many scores of thousands of dollars. Steam-dredges were delayed for hours, even days, while obstructing rock was blasted away by dilatory contractors, at an enormous demurrage of several dollars a minute. At first no proper bulwark was built to retain on the canal banks the excavated mud, which drained right back into the canal. Ships were held on heavy demurrage while room was made ashore for their cargoes, in many cases losing half the crew from fever before released. Dismantled locomotives, imported from Belgium by blundering agents who had mistaken the gauge, rusted beside the track, up to the axles in mud. A shedful of cement, left unprotected after the shed was burned, solidified as it stood in the sun and rain. The lowest code of commercial honor prevailed. High officials, taking undue risks, demanded undue privileges, appropriated the company's time, money, and servants, planted avenues of trees and flowers to mitigate the desolation of their front yards, and sighed for the vacation season. Merchants and contractors, after plundering the company, plundered

each other. The simple negroes they cheated systematically, selling them cotton clothes for woollen and charging them exorbitantly for small services; and every Sunday morning a long line fell in to receive their pay at the contractors' windows, less a discount for gold double that at which it was obtained from the Canal Company. A child might have perceived the utter impossibility of serious work under such auspices; nevertheless, "the canal will be opened in 1889," M. de Lesseps now averred.

Things were in an even worse shape when in February, 1886, M. de Lesseps sailed for the Isthmus on a diplomatic "tour of inspection." On this journey, at his own solicitation, he was accompanied by the Hon. John Bigelow, formerly United States Minister to France, a man of unquestioned authority and trustworthiness, who went as the representative of the New York Chamber of Commerce. Mr. Bigelow, on his return, hinted broadly that De Lesseps was neither financier nor engineer. By January, 1886, he reported that only 14,678,856 cubic metres, of a total of 120,000,000, had been excavated. At the close of 1886, if the January rate were kept up, he estimated that rather less than four-fifths of the whole work of excavation would still remain to be done. The climate he described as one where "life dies and death lives." The Chagres River, he discovered, sometimes rose from a depth of two feet to forty or fifty feet in a few hours, and he dwelt on the new difficulty of keeping the Panama Bay section from being "filled in by the ocean and the Rio Grande." An Anglo-Dutch company, engaged to finish the vital operation of cutting through twenty million cubic yards of earth and rock at Culebra by July 1, 1889, he found had performed their work one-sixth as rapidly as agreed; and unless the average increased, he predicted that that contract alone would occupy about fifteen years. Recalling the original estimate of General Türr's parent company of a total cost of $213,500,000, to include harbors, basins, and turn-outs, Mr. Bigelow pointed out that of the reputed total receipts of $120,000,000 from all sources to April, 1886, the greater portion had been expended on the work of preparation and installation, and not in actual digging. This circumstantial testimony from an unprejudiced fellow-traveller who had walked, ridden, or sailed with him over every mile of the work, it might be supposed, would have influenced M. de Lesseps' subsequent statements. The dupe of his own romances, made desperate by the appalling truths that were just dawning on him, or overtaken by a dotage which regards not consequences, he nevertheless informed

stockholders at a Paris meeting, three months later, that the directors were "undaunted"; that the health conditions were satisfactory—"the future sanitarium of Europe," he had dubbed the Isthmus; that the "assurance of the canal's completion" had silenced the "opposition" in America, which had "caused some uneasiness," and that the company's adversaries, seeing they were "unable to prevent the canal from being built," had at last resolved to benefit by it and would "henceforth become useful auxiliaries"! The receipts, he added cheerfully, would suffice amply to pay large interest on all the capital —probably six or seven per cent on a capital of $400,000,000. It was a mistake, he insisted, to judge of the duration of the work by the nature of the material already excavated—not because the hardest part was accomplished, but because "the rate of extraction increases with the improvement of the machinery and familiarity with the methods of work," as was clearly demonstrated at Suez, where the first and third excavations had absorbed two-thirds of the total amount expended, while the last fifty million metres removed cost one-half less than the first twenty-five million. This amazing address closed with a characteristic burst of rhetoric, in which its author pledged himself to open the canal in 1889, "within the cost estimated by the Congress of 1879," in spite of the machinations of unprincipled speculators, who had forced him to borrow money at excessive interest; whereupon the report was adopted, by a unanimous vote, "amid loud applause."

The bubble was still intact, but its hues were fading. In Paris the story was of a piece with that at the Isthmus. Millions of francs that should have found their way to Panama were diverted for home distribution into the largest corruption fund on record. Newspapers and public functionaries were hired to assist the propaganda of untruth. When, through the stoppage of resources, misrepresentation proved no longer efficacious, enormous loans were negotiated at outrageous discounts and the interest burden ruthlessly piled up at the expense of the first investors. At the outset M. de Lesseps unquestionably reckoned on American subscriptions; but an unsubsidized New York press experienced no hesitation in telling what it knew. The only marvel to Americans was the apparent gullibility of French investors and their haste to throw good money after bad—a vagary now explained. M. de Lesseps, pressed for results and hard pushed for funds, was at last compelled to temporize. Hitherto he had indignantly repudiated insinuations that Culebra and the Chagres were

uncontrollable. In a signed interview, as late as March, 1886, he denied Lieutenant Wyse's allegation of "extravagance in useless and unduly expensive or absurd contracts," declaring that from 15,000 to 20,000 men were constantly at work on the canal, which he still expected would be completed by 1889. He denied also that the Chagres River intercepted the canal "a hundred times," protesting that it did not interrupt the canal at all; that, on the contrary, "we have changed the whole course of the river and made it run on the other side of the mountain altogether," and that, while the river rose above the canal at flood-tide about twenty feet, the canal would be protected by "a strong wall." The worst part of the work, he added, was already done.

Every one of these statements was demonstrably untrue. So also was the reaffirmation in another Paris address that the canal would be completed by 1889 "at the very latest." In sober earnest, the problem of the Chagres was never solved. The plan of lateral canals was only a suggestion. Lieutenant Wyse's allegations were exact to the letter. A Colombian expert even asserted that no more than 5,000 men had ever been employed, and that the work proved it. Only the easiest part of the excavation had been accomplished. The great rock-cut at Culebra was barely touched. At the rate established the remainder of the work would have occupied another twelve years. M. de Lesseps himself, indeed, only a few months later, was turning in desperation to M. Eiffel to devise precisely such a lock system as he and the majority of the Congress had agreed in 1878 would be ruinous and impracticable. The locks, he now explained, would entail some delay, but the canal would nevertheless certainly be opened in 1890. He omitted to observe that operations had been in progress for seven years, that the concession had only five years more to run, and that not a fifth of the work had been done.

Then, if ever, was the time to let the worst be known, to defy the blackmailers who were swarming about him, hoping to profit by his self-invited distresses. Then was the moment to confess his own incompetency, to refuse to squander another centime of the unfortunate men and women who had loyally stood by him in an enterprise of which, engineer or no engineer, he must already have divined the catastrophe. Instead, he once more employed his old resource of meeting argument by emphatic assertion with no basis of fact and renewed his efforts to fleece the confiding "woollen stockings" of their last gold-piece by playing on their patriotism. The collapse of

the lottery proposal, originated and promoted by foreign bankers, was a severe blow. As Charles de Lesseps has testified, the hands of brigands were at his throat. Existing newspapers clamored for more plunder; new ones were started for the sole sake of sharing it. In self-defence, the luckless Count bribed right and left. The attempt to coerce the government into guaranteeing the new loan was based on a cold calculation of the political influence on the masses. Its fortunate miscarriage, while it vindicated the Republic, left him no alternative but resignation and a declaration of bankruptcy. Even then he believed confidently that the very extent and intricacy of his web of deceit would compel a government rescue. The damaging parts of M. Rousseau's report it was contrived to withhold from the public. The zealous Lieutenant Wyse posted off to Bogota, not in such high spirits as when he began his famous ten-day ride of seven hundred miles from Buenaventura, subsisting on chocolate-balls, but still sanguine of his ability to avert the worst. Under the existing contract the completed fraction of the canal, with all permanent plant, was to revert absolutely to the Colombian government on March 3, 1892. At the date of M. Wyse's visit, President Nuñez, aware that the proportionate third on which the six-year extension depended was not completed, urged immediate confiscation. Remonstrance was, however, effective, the Bishop of Panama and the Clerical party interceding; and in 1891 M. Wyse, after overcoming the cool demand for a $6,000,000 specie deposit, reported a continuation of the concession for ten years, provided a new company should be organized by February 28, 1893, with sufficient capital to resume work "in a serious and regular manner." Colombia, in driving this hard bargain, avoided the certainty of expensive litigation, international ill-feeling, or domestic strife by simply delaying for a year foreclosure on property protected by the company's caretakers at a monthly expense of $60,000. M. Wyse accompanied his report with an estimate that the canal might still be opened in another five years by an additional expenditure of $120,000,000 and the construction of locks and an artificial lake; but the day of estimates was over. The bubble had burst. The bewildered stockholders found their gaze fixed on emptiness. Kelley's darling project was a myth. The time for the seizure is close at hand, with no present hope of salvation.

Expert actuaries are only just beginning to unravel the accounts. The actual cost to date of the completed fraction, variously estimated at one-fourth, one-fifth, and one-tenth of the whole, is apparently $260,-

000,000—more than double the first estimate for the entire work. In 1886 De Lesseps himself, admitting then that the Panama Canal was "ten times as difficult as the Suez Canal," raised his total estimate to $220,000,000. He defended the increase by explaining that it included interest on loans and administration expenses, whereas the first estimate was for the "actual cost of the canal." The net cost a metre no living man can determine, in the absence of precise figures concerning the annual interest charge—at last accounts something like $14,000,000—the amount of waste, and the number of metres excavated. Unmindful of his early estimate of a maximum total of seventy-five million metres, M. de Lesseps announced, in 1886, that fifteen million metres having been removed, only eighty millions remained—discounting in this particular, by a trifle of twenty-five million metres, the simultaneous calculation of Mr. Bigelow from the same "official" data. In like manner he fixed the cost a metre at "from twenty-five cents to a dollar." Señor Tauco Armero, a Colombian pessimist, in 1887 reckoned it at five dollars, inferring thence, not quite fairly, that the rest of the work, excluding the Gamboa dam, would cost little short of $500,000,000. Under a liberal estimate, however, letting the entire expenditure to date represent one-half the prime cost of a completed canal and allowing another eight years for its construction, with interest constantly accumulating, the anticipated annual traffic surplus of $8,400,000 would be absorbed for nearly a century. In other words, the canal could never pay. It must be borne in mind, moreover, that the cardinal value of the Panama route is as a tide-waterway.

The French shareholders, therefore, hard as it may seem, should congratulate themselves that the government exposure is the best thing that could have happened for all concerned. That M. de Lesseps, once a popular idol, should have so lightly hazarded the glory of a brilliant career in a scheme worthy of an arch-type of the conscienceless "promoter," is lamentable; that, at a patriarchal age, he should be adjudged worthy of the fate of a common criminal, is more lamentable; it is most lamentable that he should have furnished conspirators with the shadow of a pretext for discrediting the Republic. In 1880 he was no longer the man, if he ever had been, to direct operations at Panama, where the mere prestige of a great name was powerless against nature's iron laws. The Paris briberies, it is clear, constituted only one phase of a wild speculation that degenerated into a systematic swindle, which was kept up for years, and in the course of which a whole nation has been hoodwinked to

abuses, patent to disinterested outsiders, by the most elaborate apparatus of scientific deceit ever perfected in unscrupulous hands. The result involves one great commercial lesson, not only for France, but for the world—that in the last analysis individual integrity must ever stand as the ultimate barrier between the public and their ruin by those they trust. Now, whether the French shareholders persist in their effort to retrieve their losses; whether the Colombian government seizes the property and invites bids, without reference to their claims; or whether it passes into the hands of other nations; nothing can be gained by forgetting that the canal work is still surrounded with unsolved problems, presenting unusual engineering and financial difficulties, to be approached only by the most serious persons, in the most cautious spirit, under capable direction, and with no hope of an appreciable return on an immense outlay during many years.

ERNEST LAMBERT.

A NEW ERA FOR THE UNITED STATES.

THE recent Presidential election has many indications of being an event of the highest importance. It remains to be seen whether the people of the United States after their rude awakening will content themselves with a tariff which has the taint of protection in it, but only in moderation, or whether they will ultimately insist upon a policy of free trade by the enactment of a tariff like that of Britain, from which protection has been completely eliminated. If the United States chooses the first alternative affairs will go on very much on the lines of the last twenty-five years up to the passing of the McKinley Act, modified, of course, by any new economic conditions which may arise. If, however, she is bent on retracing her steps with the view of ultimately arriving at free trade, this action will be productive of economic and political results of supreme moment to the world.

The vastness of the area of the United States, the fertility of her soil, the variety of her natural products, her rapidly growing population, all mark her out as the coming great power on the earth. For the last quarter of a century, a period which has witnessed stupendous economic changes, she has been the leader of the nations in the paths of protection. Protectionists in all parts of the world have pointed to her as their great exemplar, and this has enabled statesmen, in the exigencies of finance, to raise enormous revenues by constantly increasing import duties on commodities. It has been enough for these statesmen to point to the fact that the United States has been prosperous under protection for the uninstructed among men to conclude that the prosperity was owing to protection. That it might be *cum hoc*, and not *propter hoc*, many have never stopped to inquire. The simple truth is that during the last twenty-five years we have had in the United States a simultaneous exhibition of the rival systems at work such as we could not have seen anywhere else. There has been perfect freedom of commerce between the various States of the Union, now numbering some sixty-six millions of inhabitants, accompanied by rigid protection against the rest of the world; and if there be one fact which is brought to the surface by late events it is this: that the

evils of protection against the outside world have far outweighed the benefits of internal free trade or we should not have witnessed such an upheaval as recently took place.

That is a great fact and cannot but have a profound influence on men's minds throughout the world. They will begin to inquire whether all they have been told as to the necessity of building up and fostering national industries by means of onerous import duties is true; and if they pursue the inquiry they will find out that the constantly increasing exactions to which they have been subjected have served not to enrich, but to impoverish them. They will discover that war and protection stand in the relation of parent and child, that all the protective tariffs of the great nations have had their genesis in war and are kept alive solely to meet the frightful expenses of past wars or present armaments. They will discover also that the vastness of the sums extracted from their pockets has been hidden from their view by this mode of taxation, and that the cry of "protection to native industry" is only the after-thought of interests brought into life by protection, which interests from the moment of their birth are in mortal terror of being put out of existence by the enlightenment of the deluded peoples.

In order to make some reasonable forecast as to the effects of the adoption by the United States of a policy of commercial freedom, it will be useful to take a glance at the general industrial and commercial situation. There is one notable fact which meets us: we find that one of the nations, the British, as regards manufactures, navigation, and international commerce, holds, absolutely in most cases and relatively in others, the foremost place among them. When we inquire how it is that these two little islands in a northern sea, with an area of only one hundred and twenty-one thousand square miles, have attained to such preëminence, we cannot but be struck by the fact that Britain possesses one characteristic which bears directly on the question and which distinguishes her from all the rest, namely, that she is the one free-trading nation, while all her great competitors are protectionist. The words inscribed on the walls of her Royal Exchange, "*Quæ regio in terris nostri non plena laboris?*" are no empty boast on the part of her merchants, for there is not a quarter of the globe which does not feel the impact of British capital and enterprise. Europe, of course, being more developed than other portions, does not attract her as do America, Asia, Australasia, and Africa; yet there is hardly a country in Europe which has not at some time or other been aided by her.

In North America it is British capital which has helped to make railroads, to open mines, to establish banks and other commercial undertakings, and in a variety of ways to develop the resources of Canada, a country as vast as the great republic on her borders. As to the United States, the part which British capital has played and is playing in this richly endowed country with its three and one-half million square miles is almost beyond computation and certainly cannot be adequately described in such a paper as this. It is imperfectly known even by those who take part in what is going on and not at all by the unthinking crowd. British capital to a fabulous amount is embarked in the United States in railroads, breweries, mines, land-companies, and industrial undertakings of all sorts, while constant additions are being made to the investments. Passing southward a similar story may be told, but on a smaller scale, as regards Mexico, Cuba, and other adjacent places. Coming to South America, we find that there is not a single state which has not felt the fertilizing influence of British capital. Brazil, Argentina, Uruguay, Chili, Peru, and the host of minor republics, all are indebted to Britain in a variety of ways too numerous to mention.

Turning next to Asia, we find Britain developing her dependency, India, including Ceylon, with its three hundred millions of inhabitants, by railways, irrigation-works, coal and gold mines, tea-growing, and numberless industrial and commercial undertakings, while we find her ensconced in the Straits Settlements and carrying on there a large emporium trade, and, as far as she is allowed to do so, pushing her way into China. Passing next to Australasia, we find this region, comprising more than three million square miles, being developed by British capital. New South Wales, Victoria, South Australia, West Australia, Tasmania, Queensland, New Zealand, one and all of these colonies owe for the most part their railways, banks, harbors, mining-companies, and other undertakings to British capital. Lastly we come to Africa. In the Dark Continent, as everywhere else, we find the ubiquitous Briton. In the north he is administering and developing with conspicuous success and to the admiration of the world the ancient kingdom of Egypt, while in the south and the east he is laying the foundations of a new and vast empire. Everywhere on this planet we find this restless and enterprising race peopling every unoccupied country, their energy pervading every clime, their ships covering every sea, their commerce penetrating every market, their influence moulding the destinies of the whole human race.

Out of all this has arisen a vast foreign commerce, respecting which a few figures will not be out of place. In 1890, the last high tide of her prosperity, the value of her imports and exports of commodities recorded at the custom-house amounted to seven hundred and forty-nine millions sterling, being at the rate of about twenty pounds per head of population, the figures for France and for Germany being about ten pounds and fifteen shillings per head and for the United States five pounds and five shillings. For the transport of these commodities, as well as for an outside international commerce, a vast marine is necessary. Of the effective tonnage of the world's ocean-going ships, steam and sailing, Britain owns more than one-half. In 1891 there were engaged in her home and foreign trade, and belonging to her, 6,129 steam and 11,114 sailing vessels of a total capacity of 8,164,541 tons. In 1891, out of a total of sixty-two million tons carried by steamers only, engaged in her foreign trade and entering and leaving her ports, forty-nine millions were British. More than seventy-five per cent, therefore, of this trade is carried on in her own vessels, while she does a considerable portion of the carrying trade between one foreign country and another and her colonies and dependencies. Enormous wealth has accrued to her from all these sources, which is to some extent exhibited in her holdings of the bonds, shares, stocks, and obligations of every kind of almost every other country under the sun and in investments of every sort the world over. It is computed that the world stands indebted to her in no less a sum than two thousand million pounds sterling—ten thousand million dollars of indebtedness in countless forms, which grows larger daily and is an ever-increasing lien on creation.

This is a remarkable phenomenon. To what does it owe existence? In my humble opinion the answer is to be found in the simple fact that while Britain has been for the last half-century striving for industrial and commercial freedom, all the other great nations have preferred a policy of restriction by means of almost prohibitory tariffs. These tariffs, while they retain a portion of the home market for home producers exclusively, hand over every other market to any foreigner who can step into the vacant place, and as the Briton is the only one who can take full advantage of the opening, it is he who obtains the lion's share of the world's trade. This condition of things must exist so long as Britain remains free-trading and other nations are protectionist. Nothing less than the absolute prohibition of her products will keep them out of the world's markets. There is not a protec-

tionist nation which has not racked its brains in trying to keep them out, the universal and favorite device being ever-increasing import duties. All has been in vain. After the inevitable disturbance to her industries which some fresh exaction causes, it is found that these industries, baffled in one direction, find vent in some other, and that British trade has been fostered by the very means taken to destroy it. The United States has been the leader in this crusade, and it is now two years ago that that outrage on civilization, the McKinley tariff, was enacted. That tariff was, among other things, to increase production, to raise wages, to destroy British trade, to annex Canada, to bring universal content and prosperity to the United States. It has been two years in operation and not one of the promised blessings has been obtained; it has produced nothing but national disappointment and the destruction of a great political party.

In the great world-competition, the non-protective country, other things being equal, must win against the protective; for so long as human motives remain what they are, so long as human nature remains what it is, men will, unless prevented, buy in the cheapest market and sell in the dearest. Production tends, therefore, to develop where it can be carried on in the cheapest manner, and this can take place only where capital and labor are allowed free play in choosing the channels in which they shall be employed, and where there are no imposts which enhance the cost of the product. In Britain these conditions are very closely fulfilled. Capital and labor there have full play, and no duties on raw materials enter into the cost of her products. The inevitable consequence is that, despite the imposition of constantly increasing duties by other countries, and even by her colonies, she commands every market in the world, with the exception, here and there, of some particular rival that is able to compete successfully with her, owing to land frontiers being conterminous and the consequent inability to send a British ship there.

Britain consists of two small islands, the larger of them possessing some coal and iron deposits, with a climate which has its advantages and disadvantages, with a soil the fertility of which is excelled by that of several of her rivals. Yet, with this moderate equipment utilized by indomitable perseverance, we find her at the head of the nations as regards international production and commerce, and if it be not the one great distinguishing characteristic she possesses, free trade, which has given her this preëminence, what is it? Her steady adherence to free trade shows that she has full confidence in the great in-

strument she has used. For the last half-century every fiscal step taken has been toward industrial freedom. Her tariff is free from the taint of protection; so is that of India; so is that of every Crown colony excepting some trifling survival here and there. In every new territorial acquisition trade has been thrown open to general competition, a policy in striking contrast to that pursued by other nations, and the only portion of her dominions where protection rears its head is in her great self-governing colonies who have chosen to follow what the mother country deems an unwise and hurtful policy. Her faith in the principle of industrial freedom remains steadfast; she is apparently the only one among the nations who recognizes the existence of such a thing as economic law, and that its behests can no more be ignored with impunity than can those of the law of gravitation. Great has been her reward. So long as she adheres to free trade and other nations adhere to protection, she will continue to be queen of commerce, mistress of the seas, and creditor-in-chief of the human race.

These conditions may, however, be changed. Her mineral resources, great as they are, are limited, and at some more or less distant day must approach exhaustion, when, of course, other and vastly larger undeveloped mines in other places, notably the United States, will be brought into play and will supersede hers. There is little probability, if any, of her changing her fiscal system, notwithstanding the natural outcries made by various interests to which the economic revolution which has been raging for the last twenty years has brought disturbance and loss. There is infinitely greater probability of other nations retracing their steps from ultra-protection, and there is just a possibility of some of them becoming free-trading, the late Presidential election being a most significant event.

The great question is: Will the United States adopt a policy of industrial and commercial freedom? An answer in the affirmative involves the most important issues, the most momentous possibilities. The effect on the world at large would be instantaneous, magical, alike on the one free-trading nation and on the host of protectionist nations which stand apart from her. Britain would immediately find a world-rival. She would be subjected to a competition of tenfold severity compared with that she now experiences, and it would be difficult indeed to say what the outcome of that rivalry would be. The problem is too complex to do more here than trace out a few leading considerations.

The entry of the United States into the international arena as a

free-trading country would lead eventually to great changes involving displacements of capital and labor throughout the world on the largest scale, causing disturbance, loss, and suffering in various directions, especially to the old country. Doubtless there would be compensations for much of this, but a state of affairs would be brought about utterly different from that which exists at present. It is difficult, for instance, to conceive how Britain would be able to maintain the supremacy she now exercises, owing to the self-disabling policy of her competitors. She would have to be content to take her normal place among the nations. The position she now occupies is an abnormal one. The action of other nations has driven her energies into directions which are not altogether good. Mining and manufacturing have been over-stimulated to the detriment of the manly vigor of her population. That population is now approaching forty millions, and her soil is not capable of adequately feeding half that number. The sooner, therefore, the existing state of things is brought to an end, the better it will be in many respects for those who inhabit, or will inhabit, the British islands, and who now increase at the rate of one thousand *per diem*. This is why I for one wish for the realization of the motto of the Cobden Club, "Free Trade, Peace, Good-will, among Nations," though the realization might possibly bring in its train the commercial dethronement of Britain.

With regard to the effect of the adoption of free trade by the United States on the other protectionist nations, it is difficult to conceive that they could very long resist following her example, and in that case it is simply impossible to over-estimate the blessings to mankind which such a consummation would bring with it. I have likened war and protection to parent and child. They may also be likened to those twins which appear occasionally, body joined to body, the life of one depending on the life of the other. Abolish protection throughout the world, knit the peoples together in the bonds of trade and common interest, and you cause the warlike spirit to wither and die. Abolish war and militarism and you destroy protection: there would then be no need for those exactions of blood and treasure which are now eating up the resources and sapping the vitals of mankind in the very centre of civilization. A new era would dawn on mankind.

GEORGE W. MEDLEY.

THE PUBLIC-SCHOOL SYSTEM OF PHILADELPHIA.

THE public schools of Philadelphia offer a striking example of the difficulties involved in advancing schools when those in authority use their offices for selfish motives, whether political or other, instead of for the purpose of furthering the welfare of the children intrusted to their care. And these schools show further the evils consequent upon a school system conducted without a responsible head, a circumstance which gives rise to constant conflict among the hundreds of irresponsible heads who, in struggling against each other for the purpose of preserving their own rights, forget that none of them has any rights; for all rights belong to the children for whom the schools exist. That the Superintendents of the Philadelphia schools might have done more than they have done in spite of all hindrances and odds against them is probable; but labor performed with little encouragement and without healthful support is, in the natural course of events, destined to lose in spirit as well as in energy.

The public schools of Philadelphia were left without supervision until 1883. Before that time the most chaotic condition prevailed, for the reason that each individual school was conducted according to the whims of its principal, who, though simply a class-teacher, prepared the course of studies and regulated the examinations and promotions without regard to what was going on in other schools. The schools were then, as now, governed by two distinct bodies: the Central Board, whose members—one from each ward—are appointed by the Judges of the Court of Common Pleas; and a Local Board of thirteen members for each ward, twelve of the members being elected by the people, the thirteenth being a member of the Central Board. There are now thirty-six wards in the city.

Among these bodies matters are arranged to a considerable extent upon the principle of power without responsibility, there being enough overlapping between the powers of the Local and Central Boards greatly to weaken the responsibility of each. The power to appoint and discharge both principals and teachers lies in the hands of the

Local Boards. The Central Board has a veto power, it is true, but this power is very rarely, if ever, exercised, practically all appointments made by the Local Boards being confirmed by the Central Board. The feeling between the Central and the Local Boards is not a friendly one. The Local Boards guard their rights most jealously—so jealously that they are in the habit of looking upon suggestions that come from the Central Board as propositions to be opposed upon principle.

When the Superintendent appeared upon the scene matters became still further complicated. As the principals and teachers were appointed by the Local Boards, and consequently depended only upon the latter for their positions, it is clear that the power to regulate the authority and powers of the Superintendent lay practically in the hands of the Local Boards, who could, if they chose, give the principals and teachers the privilege of ignoring or defying the Superintendent. Now the Local Boards, fearing that the Central Board would gain in power through the instrumentality of the Superintendent, decided not to look with favor upon him. The natural result was that the principals, who had hitherto been lords and masters of their own schools in many instances, took advantage of the attitude of the Local Boards and vowed that they would not be governed by a Superintendent. The Superintendent was, therefore, as a rule, not welcomed, but simply tolerated, and he was in consequence obliged to feel his way slowly and carefully.

The Superintendent received the support of the Central Board, it is true; but the support of this Board has, under the circumstances, been of comparatively little value. Further, even the actions of the Central Board are much deplored by those who are in a position to know definitely what is going on. The Board has the reputation of being conservative and by no means sufficiently energetic successfully to cope with the various Local Boards. It has the further reputation of being to a considerable extent led by a single member—a thorough politician—who apparently for no reason other than the pleasure of wielding power has done more to stand in the way of progress than any one connected with the public schools of Philadelphia.

In regard to overcoming opposition, Dr. MacAlister, the first Superintendent, was not very successful. While a large number of the teachers became strongly attached to him and more than welcomed his suggestions and teachings, a much larger number never took kindly to him, and he won as allies only a few of the thirty-odd Local Boards in the city. Dr. MacAlister appears to have kept aloof from

the schools where he was not particularly welcome, and there are schools in Philadelphia that he never visited. His influence was needed, if anywhere, at the Normal School, where nearly all the public-school teachers of Philadelphia are trained and which is sorely in need of improvement. But he never gained a foot-hold in that institution. He very rarely visited the school and the influence that he exerted over it was practically *nil*. He exerted as little influence over the Boys' High School as he did over the Normal School. The Assistant-Superintendents—there are now six—have to a considerable extent shared the fate of the Superintendent. It is owing in no small part to this constant conflict that the public schools of Philadelphia, after being supervised for ten years by a corps of earnest workers, are still but little beyond the beginning of a progressive movement.

Although the schools that had been in the hands of able principals were doing good work, and indeed in some instances very excellent work, when Dr. MacAlister entered upon the duties of his office, in 1883, yet, according to accounts, the condition of things, taken all in all, was at the time deplorable. Sing-song concert recitations were in vogue, pure memorizing was the order of the day, and the results in general were miserable. I have been informed that it is almost impossible to imagine how degraded things were at the time.

In two ways the Superintendent endeavored to make order out of chaos: first, by constructing a course of studies to be followed by all the schools; and, secondly, by conducting regular semi-annual examinations for promotion, the questions being formulated by him and sent to the schools of the city with minute directions as to the manner of conducting the examinations and marking the papers. Although regularly stated examinations for promotion are now looked upon as unscientific pedagogy, they were probably, under the circumstances, justifiable in Philadelphia at the time. In previous years the promotions had been largely regulated according to the number of vacant seats in the next succeeding grade. In some schools promotions had been made when the pupils received an average of forty or fifty per cent, while in others an average of seventy or seventy-five per cent was required, so that the grading of the pupils varied greatly in different schools, the children of a given grade of one school being perhaps no further advanced than those of a much lower grade of another school. In not a few instances members of the Local Boards had taken upon themselves the responsibility of promoting pupils upon the request of parents and against the judgment of the teachers, so that

a number of schools became entirely ungraded. Even to-day this custom of promotion by members of the Local Boards is to a certain extent followed. The Superintendent made the experiment of abolishing examinations for promotion a few years ago, but so perceptibly did the results become poorer that the examinations had to be resumed. Dr Brooks, the new Superintendent, is once more trying the experiment.

The course of studies constructed by Dr. MacAlister, although not without marked flaws in certain instances, was nevertheless in general founded upon scientific principles. It certainly proved him to be a progressive man. But since scientific teaching was unknown to the vast majority of the teachers, the new course of study was beyond their grasp and it was consequently followed by them in form rather than in spirit. The influence exerted upon schools by the new course of study, together with the attempt on the part of the Superintendent and his assistants to break up the mechanical work without materially increasing the professional strength of the teachers, has been a most peculiar one. While the concert recitations and the mechanical rote-work have in the vast majority of instances been broken up, truly scientific teaching has not yet taken the place of the mechanical teaching, so that we find the instruction at the end of ten years of supervision neither mechanical nor scientific. What we do find, however, in very many instances, is the weakest teaching conceivable, the work in the average class-room lacking in force and application. I am informed by the Superintendents, however, that the results are now far better than they were in former years.

The effect of the destruction of the old without a proper substitution of the new is particularly apparent in the primary schools. The picture presented by the average primary school is chaotic. The lower grades are as a rule divided into sections of from ten to fifteen pupils. While some of the lessons are general, that is, given to the whole class, most of them are given to only one section at a time, so that in many of the grades the children receive direct instruction for no more than two or two and a half of the five hours that they spend in school, the little pupils being engaged in busy-work more than half the time. In nearly every class that I visited the busy-work meant little more than idleness and mischief. It was the most aimless work that I have ever found. In most cases the teacher had no eye for any of the pupils excepting those in the section that she was instructing at the time. In some of the classes the children at times amused them-

selves by walking around the room or by talking so loudly that the hum that ensued was so disturbing that the teacher could scarcely communicate with the pupils to whom she was imparting direct instruction. As to the busy-work itself, some of the pupils were simply scribbling all sorts of things upon their slates; others were copying words and figures from the blackboard, rubbing them out and writing them over again, without appearing to perform any definite task and without any supervision by the teacher. A favorite occupation appeared to be the drawing of borders consisting of moons and half-moons around their slates. In a word, the pupils were generally without a task, wasting their time and learning habits of laziness and carelessness.

The direct teaching itself was also in most instances not planned and not prepared, and the results were mediocre. I found the reading very bad, the arithmetic not very much better, and beyond that but little was attempted. The object-lessons that I witnessed were ridiculously weak. During a lesson in form that I attended, and which was fifteen minutes in duration, the pupils learned nothing beyond the fact that the "surface" meant "the outside." A lesson on a stuffed frog given by another teacher was worth about as much.

During a transitional period such conditions as these are perhaps preferable to the old-fashioned teaching, but a transitional period of ten years is entirely too long. As the primary schools lack completely in suggestiveness, it would scarcely be worth our while to enter into detail concerning special lessons that I attended. In the grammar schools I found the teaching in general also weak and the results not very good. Much of the teaching is aimless and not prepared, and there is so much silent work and testing going on that it is not unusual to enter class-rooms and find no teaching at all at the time. There is, as in the primary schools, in many instances a noteworthy lack of force and energy, although the chaotic condition which characterizes the primary schools is not found in the grammar grades. The grammar schools are, however, very uneven, much more uneven than the primary schools, so that while many of them are still very poor, some of the grammar principals have succeeded in developing very excellent schools. There are undoubtedly more good schools now than there were before the establishment of supervising principalships. The establishment of these principalships was perhaps the most important step toward progress taken while Dr. MacAlister was in office.

In regard to particular schools, I may say that I have visited few

in the United States that impressed me more favorably than the Lincoln School, which has been in good hands for many years. During the past five or six years and until recently the school was in charge of Miss Wolfe, whose earnestness and beautiful spirit have exerted a most excellent influence upon it. The teaching that I witnessed there was in the main prepared and thoughtful, and the results were good. The language work in the upper grades was excellent. I witnessed in this school a lesson in arithmetic so interesting that it created the most intense enthusiasm among the pupils. During the lesson the children were called upon to use their own judgment concerning the capacity of vessels, the length of objects in the room, the weight of different objects, etc. I attended also a very good lesson in history, one in civil government, and one in language.

Among others I found the Robert Morris School especially worthy on account of its suggestiveness. The principal, Mr. Flounders, has given a great deal of attention to illustrative teaching, many of the lessons in his school being made valuable and interesting by the use of the magic lantern and the heliostat. Mr. Flounders has made an excellent collection of hundreds of views from all parts of the world, which are frequently used by the class-teachers in the geography and history lesson. He has himself made many excursions for the purpose of photographing places of interest. He is now preparing a large number of slides to be used in the same way in teaching natural history. Quite a number of Philadelphia's principals are interested in work of this nature and are introducing it into their schools.

Some very excellent features may be found also in the McClellan School, which is in charge of Mrs. Spallen. One of the interesting features of this school is a club organized by the members of the highest grammar grade and entitled the Legion of Honor. The aim of this society is to build character, and the requisites for joining are truthfulness, honor, and politeness. The principal informed me that this club has exerted an excellent influence upon the school, the pupils knowing that they will not be eligible to membership unless they can be trusted. She furthermore said that the pupils had become so trained that they now work just as well when the teacher is out of the class-room as when she is with them. Another interesting feature of this school lies in the fact that when possible the teachers take the pupils out for instruction. One of the teachers has taken out as many as sixty pupils at a time without the slightest inconvenience or difficulty in preserving order. Among the primary

schools that I visited I found the Landreth School particularly interesting on account of its excellent equipment and the earnest effort on the part of the principal, Miss Wallace, to make her school a success.

In addition to the general weakness of the Philadelphia schools the curriculum is very narrow. It includes neither music nor the natural sciences. This year clay-modelling has been added to the course, this being the first real attempt to introduce manual training into the elementary schools of Philadelphia. A special supervisor of drawing has recently been appointed to aid the teachers in their efforts to teach drawing and modelling. Before this year Philadelphia did not have a single special teacher of drawing. Sewing and cooking have been taught in the schools for a number of years.

Philadelphia has, however, for several years had a number of interesting special features. Among these is the Manual Training High School, which in my opinion is one of the most interesting and thorough institutions of its kind in the country. The principal, Mr. Sayre, has done much toward unifying the manual with the literary work of the school. The school has proven a great success. Recently a second one has been opened. Another very interesting institution is the Public Industrial Art School, which is in charge of Mr. Tadd. The school, although not really a part of the public-school system, is nevertheless supported by public funds. The aim of the school is to teach public-school teachers and pupils the arts of modelling and free-hand drawing. Some of the features of the work are very remarkable in their way. This school will repay a visit by any one.

The kindergarten also has formed a part of the public-school system during the past few years, and Philadelphia has a special supervisor of kindergartens. Unfortunately, however, the kindergarten training received at the Normal School is little more than nominal, being limited to one hour of daily instruction in theory for one year and to five days of observation in the kindergarten during that year. The students, therefore, receive their diplomas as kindergartners without once having come into direct communication with kindergarten pupils. The kindergarten course forms a part of the regular teachers' training course, which is of one year's duration following a three years' course in the High School. A new Normal School building is now in process of erection, and in all probability when this is finished the course of professional training will be extended to a term of two years. In spite of the general lifelessness of

the Philadelphia schools, an undercurrent of progress is now beginning to manifest itself. The establishment of supervising principalships has done something toward stimulating the teachers, for the reason that those desiring such a principalship are obliged to pass an examination in professional subjects before receiving their diplomas. The progressive spirit is, however, travelling too slowly, the proportion of progressive to non-progressive teachers being still very small.

It is not difficult to understand why the Philadelphia schools have progressed so slowly in spite of the establishment of a department of superintendence. It is an accepted fact that the school is as the teacher is, and consequently the advancement of the schools of any particular locality means practically the elevation of the standard of its teachers. As there are but three ways in which the standard of the teacher may be raised, and as in Philadelphia two of them have not been applied at all and the third but imperfectly, it is clear that but little has been done toward the advancement of the Philadelphia schools through the instrumentality of the Superintendent and his assistants. The means to be employed for raising the standard of the teachers are: first, the appointment of teachers superior to those previously appointed; secondly, the gradual weeding out of incompetent teachers; and, thirdly, the education of the teachers after their appointment and while engaged in teaching. In regard to the teachers appointed, no material advance has been scored during the past ten years: first, because the Normal School has not materially improved; and, secondly, because the appointment of teachers is still entirely governed by politics and "pulls." In the appointment of principals and teachers the word of the "ward boss" still reigns supreme. A question not infrequently asked of those applying for positions is, "Who are your voters?" Those graduating from the Normal School with an average of eighty-five per cent—after a most superficial training—receive without further consideration permanent principals' certificates. Cases not infrequently occur where unlicensed persons with a "pull" earn a livelihood by substituting in one school after another. Next, the discharge of incompetent teachers is a matter attended with a great deal of difficulty in Philadelphia. Sometimes, after a considerable amount of agitation, an incompetent teacher is discharged, but it occasionally happens that a teacher, after being discharged by one Local Board, is soon after reappointed by another.

The improvements that have taken place in the Philadelphia

schools since the establishment of a department of superintendence are due, therefore, entirely to what has been done by the Superintendents to improve the minds of the teachers after their appointment. But even in this regard not very much has been done. Every teacher has been visited two or three times annually in her class-room by one of the assistant-superintendents. But when visits are so infrequent they are valuable only as a means of inspection; they are not truly helpful. With five hundred teachers in his charge, no Superintendent can be expected to be of much service to any individual teacher in her class-room. Neither has much been done in the way of teachers' meetings; regularly stated meetings called by the Superintendents for the purpose of instructing the teachers in the science of education—meetings such as those upon which the Superintendents who have succeeded in developing good schools so largely depend—have never been held in Philadelphia.

It is true that a great many meetings are held by the assistant-superintendents, nearly one hundred having been called during the first three or four months of the present school-year. But these meetings are as a rule held with small groups of teachers, so that eighty or ninety meetings do not necessarily mean more than one or two to an individual teacher. Although the work of five hundred teachers cannot be properly supervised by a single person, yet even with that number of teachers much could be done in the way of instructive teachers' meetings provided they were systematically arranged. By meetings of the teachers in groups of one hundred and twenty-five and by holding only two meetings weekly, each teacher might be given the opportunity to attend a meeting as often as once every two weeks. Some of the supervising principals meet their teachers regularly for the purpose of instructing them in the science of education, and much good has undoubtedly resulted from these meetings in individual schools. While Dr. MacAlister was in office he delivered, for a number of years, lectures upon psychology and the science of education at the Normal School every Saturday morning. But attendance upon these lectures was voluntary, and not more than one teacher in five or six attended them. Besides, lectures upon educational topics in no way take the place of educational discussions in which each teacher takes an active part.

The fact that so little has been done by the Superintendents toward instructing the teachers may possibly be accounted for to a certain extent by the fact that they have been hampered in their work

by the members of the Local Boards. Some of the Local Boards have, however, cooperated with the Superintendents, and others are now following in their footsteps. The evidence that I have collected concerning the extent to which the members of the Local Boards have interfered with the efforts of the Superintendents to aid the teachers by means of meetings is very conflicting. In addition to meetings organized by assistant-superintendents, the City-Superintendent could readily meet with all the teachers of the city once a month. Should he meet them in bodies of one hundred and fifty and conduct one conference daily, he would be enabled to meet all his three thousand teachers once in four weeks. I scarcely believe that it is asking too much of a Superintendent to devote one hour a day to instructing the teachers in his charge.

Dr. Brooks, the present Superintendent, has a very inspiring influence upon the teachers, and on this account, as well as by means of his personality, I believe that he is destined to win the confidence and loyalty not only of the teachers, but also of the various Boards of Education. I believe, however, that he is making the mistake of endeavoring to improve the schools by means of constructing new courses of study rather than by devoting much of his time to inspiring teachers, a work for which he is so eminently fitted. He is already becoming very popular among the teachers, for the reason that he has shown himself to be heartily in sympathy with them. He now has in contemplation the organization of pedagogical centres to create an educational atmosphere throughout the city. This school-year he has delivered a number of lectures on his new course in arithmetic.

Last fall a new association known as the "Educational Club" was organized, only the male teachers and Superintendents of Philadelphia being eligible to membership. Dr. Brooks is lending this association his hearty support. At the meetings of the club, which take place once a month, papers upon pedagogical subjects are read. The organizers of the club are in hopes that it will be productive of much good. It deserves every encouragement in its noble efforts, but it must not be forgotten that similar institutions have existed in Philadelphia, as well as in other cities, without exerting any material influence upon the schools. The Educational Club should, therefore, learn by the mistakes of others. What is now needed in Philadelphia more than anything else is the awakening of public sentiment so that a true public demand for better teaching may be created. It should, therefore, not remain purely a teachers' organization, but it should

strive toward educating the public to the knowledge that there is a science of education, not only by admitting to membership, but by striving to obtain as members, a large number of non-professional citizens. Until a demand for better work manifests itself on the part of the public, the school system is likely to continue very slowly its way toward progress. An educational society, the Teachers' Institute, has been in existence in Philadelphia for many years, but the association has not been a marked success.

But whatever might be done by the Superintendents at Philadelphia under the present circumstances would be simply palliative. Before the Philadelphia schools can be placed upon a firm foundation, it will be necessary to apply a remedy that will cure the most flagrant of the evils now existing. These evils as we have seen are: first, the want of a responsible head; secondly, the lack of thoroughly trained teachers; thirdly, the appointment of teachers by "pulls" instead of for merit, or, in other words, by politics; and, fourthly, an inadequate number of assistant-superintendents.

But how could a change so radical be effected? This might, in my opinion, be most effectively done by giving the Superintendents, whose only true function lies in advancing the schools, full opportunity to advance them, and by reason of this opportunity holding them fully responsible for their condition. Unless the Superintendents be given every opportunity to raise the standard of the teachers they cannot be justly held responsible for the condition of the schools. Consequently, in order that Superintendents may be held responsible for the condition of the schools in their charge, they must be given full power to appoint and discharge teachers, as well as to use with authority such means as they may deem fit to improve the methods of the teachers. Further, as a single person cannot properly supervise the work of more than a limited number of teachers—experience proves that there should not be more than two hundred teachers at the utmost to a supervisor—the number of assistant-superintendents should be increased to fifteen. In order that the above conditions might be met, the public schools of Philadelphia should be divided into at least fifteen districts, each of which should be placed in charge of an assistant-superintendent, who should be given enough independent power and authority to enable him to assume the responsibility for the condition of the schools in his district.

In order that unity might be preserved there should be, first, a City-Superintendent responsible for the work of all the districts, who

should consequently be regarded as the responsible head of the school system in all that pertains to pedagogical matters; secondly, the City-Superintendent, together with his fifteen assistants, should form an independent Board, whose duty it should be to take charge of all educational matters and educational matters only, thus leaving the financial part, as now, in the hands of business men. The Superintendent and his assistants should be appointed by the Central Board. The Board of Superintendence should meet frequently, all matters relating to the educational work throughout the city should be brought before it for discussion and decision, and, above all, the appointment and discharge of principals and teachers should be left entirely in its hands.

J. M. RICE.

THE SCIENCE OF MUNICIPAL CORRUPTION.

I HOPE to be pardoned for saying that the most barren literature of a time full of barren discussions is the literature of closet philosophers who spin theories to reform municipal government. Municipal government is corrupt simply because corrupt and corruptible men are elected to office. Corrupt men are elected to office because office "pays," and corruptible men yield because they make money by yielding. If municipal governments had no profitable contracts to award, if school boards had no text-books to select, we should have no "municipal problem." But since, even after limiting municipal government to the fewest possible dealings involving financial transactions, we have left a wide field of profitable operation for dishonest men, the first step in a thorough study of the municipal problem is to classify the facts of official corruption. The corruption of boards and councils has been reduced to a system, and the facts about bribery are not hard to obtain if they are sought in the right channels. The disadvantage in presenting them is that they must be so presented as to forbid verification. There are, however, trustworthy men in many communities who know such facts as I shall present. They lie too close to the surface in certain commercial circles to provoke surprise, and they come into the knowledge of most lawyers whose professional acquaintance at State capitals or in city halls is extensive or intimate.

Twenty years ago I knew a young man, of a good New England family, who for quickness and intelligence displayed in mechanical details at the factory which employed him was transferred to the experiment station attached to the city office. There he again distinguished himself, and he was occasionally sent to other towns as an expert with agents who sought contracts with municipal bodies. On these canvassing tours he was often surprised, especially when competition was active, by prolonged secret conferences between his superior and shrewd but rough-looking members of the boards, who unceremoniously rushed into the hotels at any hour. His work was largely with the best men on the boards, whose votes he almost always

secured. At last he was sent out alone to secure a contract in a small city of a Western State. Full of enthusiasm, he worked day and night for two weeks to convince not only the board but every citizen that he could meet of the superiority of his company's work. One of the committee, a substantial and excellent man, introduced him to his family, and another paid him social attentions. He paid especial attention to the editors of the two local papers, and he was surprised that they made no mention of his work, but he thought that they might feel disinclined to influence public officials in the discharge of their duty. About a week before the award was made a competitor appeared. I will tell the story of what followed in the young salesman's own words:

"I heard of my competitor at once and sought him out with a great deal of anxiety. I knew the work of his company, and I knew that it was by no means as good as ours. The man himself I found to be cool and shrewd, considerably older than myself, but I discovered that he knew little about the work that our companies did and he was unacquainted with the details of the manufacture or with the points of difference between his company's and other companies' work. He was courteous and friendly, and in the evening he complimented me highly on the campaign that I had been making; he expressed regret that he had not reached the ground earlier, as he could see at once that he had now no chance, and had so written home. But he said that he was expected to stay for form's sake until the vote was taken. In the mean time he would not try to do much, but would simply enjoy himself. I wrote home that night in great glee, saying that I considered myself positively sure of the contract. I received a complimentary letter in reply, containing, however, the caution that one was never sure of such things until the votes were counted. I was a good deal surprised the next morning to read in one of the local papers that my competitor, Mr. Blank, the gentlemanly agent of the —— Company, which had lately secured contracts in the cities of —— and —— and ——, had arrived, and would doubtless, during the week, submit proposals to the council. That afternoon the editor of the other paper called upon me and chatted a long time. He talked as if he would like to print something about me and our work, but I looked in vain for a paragraph the next morning. The next day, however, his paper published a long extract from a paper in another town, giving glowing accounts of my competitor's wares. My opponent, however, was true to his word. He went about very little, but he made the acquaintance of a sort of lawyer of the village kind, in whose office he spent most of his time playing checkers. I continued to work unceasingly all the week. When the award was made I had the votes of the two respectable men who paid me attentions. My competitor had the other three votes and the contract. My guileless competitor was, of course, an old hand at the game, and the office of the checker-playing lawyer was the den of the local boss, where he quietly bought the votes of the three politicians of the board, leaving me in undisturbed possession of the votes of the two good men and the heartfelt sympathy of the other friends I had made."

The sequel to this story is even more instructive. When the tyro returned home his chief took down the name of the competitor and soon afterward employed him. The young man continued to be employed in small places where no great competition was expected, and was usually successful; but when he was sent to a large city he promptly lost the contract. His turn, however, was to come. I continue his story in his own words:

"After some years I happened to be in a distant city when a chance suddenly occurred for an important contract involving profits of many thousands of dollars. My principals telegraphed me to take charge of the matter and wrote that I would doubtless meet in competition 'two of the most astute and able men in the business.' They added that I was as clever as either of them and that I knew ten times more about the work; that there was nobody else to send, and that I could win the fight if I 'would only just get right down to business.' An arrangement was subsequently made between my company and the two firms represented by the two other agents by which all were to strive together for the contract at the best figures possible, and then to divide the work, each firm to get that portion which it could most conveniently do. There were several other competitors, and I was told that the 'fight' would doubtless be long and bitter and possibly expensive, but that I was to communicate at once with A. and B., the salesmen of the two firms working in union with my company, who would have instructions similar to mine. I was told also, in the strictest confidence, that A. was reputed to be 'a little tricky,' and that I must 'watch his operations closely.' In other words, I was charged to see that none of the money which he should report as having been used in bribery went into his own pocket. I am sure that he 'knocked down' not less than five thousand dollars.

"At the first meeting of the three allied agents—A., B., and myself—A., who naturally assumed the lead, said abruptly, 'Well, this evidently means business, and we may as well make a clean breast of it.' Turning to me he asked: 'How many votes can you hold?' I named four. There were twelve men on the board. 'Can you depend on them? Can you deliver them for the new deal?' I could reply only that I believed the whole four would vote for me, though I had no positive promise. 'Well, but what hold,' asked A., 'what *twist* have you got on them?' 'None whatever, except their convictions of what would be best for the city.' 'Then we can drop your men at once; votes don't count that can't be relied on. B., how many votes have you?' B. named five. 'Well,' said A., 'there is a mistake somewhere, for I have five also.' As neither claimed any of my men, it was evident that A. and B. could not each have five of the remaining eight. A comparison of the lists at once disclosed the names of the members claimed by both A. and B. Then A. said that his men would stand firm for any deal that could be made: the arrangements were completed, the sum each was to receive was settled, and a good advance payment was made, the balance being contingent. A. had made all his deals himself; he knew all about his men and he would answer for them. B. was less certain; he had made his arrangements with the boss, who had guaranteed him seven votes and had named five as already 'fixed.' He had bargained with the boss by giving a lump sum for the necessary seven, and he had paid a reasonable advance, and the boss made what

terms he could with the members. A. objected to this method of dealing, because while the boss might mean well and believe that he could deliver the men, he could not hold them against materially higher bids from outside, nor could he afford to quarrel with them. After this I dropped out of the conversation.

"An estimate of the probable total expense was made out, and I was requested to make my draft for one-third of it. I objected, saying that this was a kind of business I never had done, and that I was not authorized to draw money in any such amounts or for any such purpose. A. made the cool reply that as my company wanted to win they doubtless expected a draft and would know very well what it was for. I did not make a draft, but I wrote, telling the facts and adding that as this was pure bribery I desired to know their wishes. To this letter a reply came in due time, written in a hand strange to me—this was before the typewriter period—and unsigned, first cautioning me against using the company's stationery for such very compromising letters and signing my name to them, and saying how sorry they were that the world was so wicked, but that as this was too often the way of the world they were reluctantly compelled, when absolutely necessary, to conform to it; that the sum named was simply awful to contemplate, but as they had pledged themselves without reserve to meet their share of the expense necessary to win, they now saw no way but to take up the load. The draft was drawn and the contract was secured."

The typical legislature or city council or (elected) board of education consists of members of whom one-third will vote as they think, or at least as they prefer to vote, regardless of possible advantages or disadvantages to themselves. The votes of another third are merchandise pure and simple. The remaining third consist of debatable men, usually respectable in private life and with honest intentions to do their public duties, but often rather weak in character and likely to owe money that they cannot pay. Whether men of this class serve out their terms honestly depends on the temptation they happen to encounter. If repeatedly called on to vote on questions affecting large competing private interests, their chances of remaining honest are very small.

As to the scientific perfection of the system and its safeguards, let me suppose that a typical city council is about to undertake some important public improvement—water-works, for example. Suppose, further, that all the piping, excavation, brick-laying, and other work for which specifications can be prepared, and for which the general public can compete, have been eliminated and advertised to be let to the lowest bidder. There still remains the pumping machinery, which may be controlled by patents or built according to special designs prepared and owned by the contractors, or in some other way so managed that the rival contractors bid not on the same detail in general competition, but each on a different detail claimed by the proposer to

be the best and so controlled by himself that no one can bid against him. Such a case involves all the necessary elements for a corrupt deal, which are, first, an amount involved of sufficient magnitude to conceal a profit large enough to afford a corruption fund and still leave a profitable margin to the contractors; secondly, absolute ignorance on the part of the general public as to the actual necessary cost of the proposed work or of the comparative working economy and efficiency of rival systems; thirdly, the certainty that whichever system be adopted, the desired work will be accomplished; fourthly, the fact that the lowest first-cost may not indicate the most desirable plan, since that may be more than offset by the greater durability or greater working economy of some other plan; and, fifthly, the fact that since there would be only one system established in the community, no subsequent comparison with others could ever enable the public to judge whether it had been imposed on.

All these elements invite corruption, and when they exist together the public may know positively in advance that corruption will be attempted and in all likelihood successfully attempted. If the council of twelve men contain no mechanical engineer or skilled mechanic whose opinion carries special weight and the contest be confined to two rival systems, the simple problem presented to the rival agents—for principals seldom personally engage in these contests—is how to get seven votes. These must be secured before the bids are submitted, because the nature of the bid will be largely determined by the number of votes secured. If the agent knows that eight or ten men are prepared to stand by him, he may raise his bid with impunity; but if he have only the bare seven, he must be more circumspect. If he have not the seven definitely pledged—and every experienced agent counts as against him every man who is not pledged for him—he puts his bid at the lowest price possible in the hope that public opinion, when the bids are opened, will bring the more respectable men to his side and enable him to get in one or two of the other sort.

In approaching such a council the agent takes a few days to look over the ground, calling on each member at his place of business and if possible at his home, in the mean time learning all he can learn of the circumstances, associations, business, and personal history of every man. At the end of his round he will have them correctly classified and will know much more of the strength of character and of the influences likely to affect every one than they know of themselves or of each other. He is then ready to begin operations. His first care

will be for the four directly purchasable votes, and he must decide whether he will engage them directly or through the boss. If he intends to "knock down" he will prefer to deal directly with the men, since he may be able to bargain with them for, say, one thousand dollars each, and to double this sum in his accounts with his firm. On the other hand, if he does not engage the boss his rival will engage him, and there will be a struggle between himself and the boss to hold them. The boss will readily ascertain what he has offered and will offer more, whereupon his men will promptly become dissatisfied and demand a higher price. Or they may pretend that more has been offered, a contingency so common in the trade that the dishonest agent who has been compelled really to pay out all he has charged, sometimes recoups himself by telegraphing home for "more mud" at the last moment, on the ground that his men are deserting him and must be held, when in fact they are as steadfast as mountains. The "honest" man in this business is the man who will stay bought. If the agent, instead of himself approaching the men, decides to deal through the boss, he will, unless he is very reckless, charge his company with only the exact sum paid, since the boss, of course, would make no secret of the matter with the principals should any question arise. The boss has his own reputation to maintain. The agreement is with the boss for so many votes for a given sum, a certain amount paid down and the remainder contingent on success. Of course arrangements are sometimes made that are wholly contingent; but an aggressive agent, accustomed to win, will usually prefer to make an advanced payment, since that gives him a better hold on the men. This arrangement is preferred by the members also, and it possesses the additional advantage of dividing the payments and so averting suspicion.

Having secured the four purchasable votes, the agent directs his attention to the doubtful men. Of these the boss, if the agent deal through him, will tell him frankly whom, in his own opinion, he can "handle" and whom he cannot. The latter group the agent undertakes to handle himself. If they are timid or inexperienced he may try to reach them through intimate friends. This method is sometimes necessary, but it is always dangerous. A man hanging on the verge of dishonesty and looking over the precipice will generally prefer to fall into the arms of a stranger whom he never expects to see again than to expose his weakness to those with whom he will continue to associate. And here appears the craft of the agent. To him the comings and goings of his intended victim are known. They meet

frequently in apparently casual ways, and a friendly acquaintance is established. Perhaps the member of the board takes a business trip to a neighboring city. The agent happens to be on the same train; they stay at the same hotel; they dine together—and the agent is a noble entertainer; they visit the theatre, and after the theatre a wine supper does the business. The victim grows confidential and lays bare all his trouble; he is in debt and his creditors are pressing; he is trying to borrow money and has not succeeded. The agent sympathizes with him; tells him that money is cheap and abundant and that he should have no trouble. He inquires into the security offered, says it is ample, and that he knows plenty of men who would jump at it. The next day he inquires and finds such a man; if necessary, the man is produced and the loan is made, of course on security entirely inadequate in any real business transaction. With some natures this method is best. Not a word has been said about a vote, but the agent knows that he has bought one. The victim, when he comes to reflect on it, knows it also, and the more honorable he is the less inclined he feels to vote against the interests of one who has so obliged him. Sometimes the agent bluntly proposes to "lend" the money himself, the nature of the agreement reached depending entirely on the character of the victim as developed under pressure. These transactions are not usually large; the small politician generally has no great credit, and cannot owe and does not handle large sums; but the agent, if he chooses, can readily pay him a few hundred dollars, charge twice the sum to his company, and pocket the difference.

When by such methods the agent has received pledges from at least three of the debatable men he considers himself reasonably sure of the contract. Knowing his own situation, he is sure that his rival cannot have made any such progress as would justify him in large advances, and he feels certain that what has been done, backed by social influence and perhaps occasional "tips," will keep his men straight and win the contract. He endeavors, however, to get the fourth debatable man so as to make eight votes secure and to guard against the ever-present danger that one of his men may "fall down" or "squeeze" him in the belief that his single vote is essential. An experienced manipulator prefers to buy outright votes enough to win. Then he can consult freely as to the highest figures at which he may place his bid without compromising his friends. This the shrewd agent always looks out for, having often to restrain rapacious members who would have him raise his price that he may get more to divide with them.

When corruption is discovered it is usually brought to light through recklessness in this particular.

While this work has been going on an entirely different "campaign," based on reason and argument, has been carried along with the incorruptible members of the board and with the public, whose good opinion and influence are most strongly desired to strengthen and sustain the corrupt men. The incorruptible members of a public body include those who are conscientious and those who are simply strong, the latter usually men of wealth and standing who do not need money and would promptly resent any approaches of an improper nature. Such men are moved either by reason or by prejudice, perhaps as often by one as by the other; but they cannot be corrupted. No improper proposal is ever made to any official who does not himself make the way easy, and the weak are always well prepared, either by the methods that I have described or by their own instincts, before actual corruption is attempted. The "campaign of education" for the public is often carried on by a subordinate of the agent who knows nothing whatever of his chief's corrupt operations—frequently by some man of special local information and influence. Sometimes reckless agents, sure of their "boodle" votes, entirely disregard public opinion; but the most successful bribers are those that have the greatest skill in combining effective bribery with all possible attention to the proprieties. The present condition of State and municipal government has developed a species of man possessing these qualities to such a high degree that nearly all bribery passes undetected. The old and gross forms of corruption would be exposed at once. The manipulation of legislatures differs from the manipulation of smaller bodies only in the complication involved in the larger number of men concerned, the effects of conflicting or interfering bills, party politics, and a hundred similar conditions.

As to the classes of men most easily accessible to corrupt influences, agents invariably agree. Easily first are leaders of workingmen's or farmers' political movements. In estimating an elected body, the members elected on such tickets are placed on the directly purchasable list without much inquiry. Next come the editors of country newspapers and newspapers in small cities; then country lawyers and that class of city lawyers who usually seek such positions, though lawyers and editors as a rule prefer to gloss over the transaction by the pretence of professional services which deceives no one concerned. Religious profession rarely makes much difference with politicians, although it

tends to render them more cautious and leads them to insist on indirect methods of approach when both parties perfectly understand the end to be reached and are equally anxious to attain it. Nothing is more common with such men, when receiving money for "services," than the expression, "Now you understand perfectly that this has nothing to do with my vote"; and if they receive a better offer from another quarter and the outraged agent reproaches them with deserting him, they quote his own language against him! "The religious sharps," say the agents, "won't stay bought." Perhaps they have mushy intellects which really deceive their owners in such matters, but the few clergymen who drift into practical politics can almost always be bought by indirect methods. Farmers are likely to fall an easy prey to unaccustomed social attentions, and are exceedingly susceptible to a form of influence of which I can only hint in these pages, but which is constantly employed with success.

The only remedy for municipal corruption is to elect no man to office who is not free from debt. Moral reputation is a flimsy security for conduct; financial competence is a very good security indeed. A man out of debt and with a bank account, even a small one, is not likely to be corrupted. Corruption involves slavery to the corrupter, and all men love freedom. The most venal man living prefers at the last moment to be able to vote as he pleases. The private circumstances of nominees should therefore be a matter of public discussion. When State and municipal legislatures are composed entirely of men whose incomes habitually exceed their expenses the problem of corruption will be nearly solved. Until then we may look for bribery wherever water-works, gas-works, or electrical plants are to be established, in the granting of street franchises, in the adoption of school text-books, in the regulation of licenses, and, in fact, in most circumstances where legislative or State action affects large private interests. The remedies which seem to me likely to be most effective are wide publicity of the conditions that invite corruption and careful scrutiny of the financial condition of candidates. The main point is to remove temptation, on the one hand, by selecting officials from the class of men that are financially independent, and, on the other, by giving them the fewest possible opportunities to exercise official discretion in a manner to affect private interests.

AMERICAN WINTER-RESORTS.

PERHAPS the migratory tendency of a large number of people who leave their comfortable homes both in summer and winter is the manifestation of that restlessness and wandering instinct which appears to be an integral part of human life. For the children of the desert and the nomads, whose hearth-stones are portable, there may be some excuse; but many Americans, after the attainment of an independence, immediately proceed to build or to buy habitations, which they furnish luxuriously and fill with every comfort and with works of art; and when this is done they abandon them or enjoy them only for brief periods during the year.

An analysis of this desire for change by persons who desert their more or less attractive firesides as soon as they are able to do so would be an interesting though difficult matter. Probably the dominant motive is that which leads to congregation and which is shared by the birds of the field and by other animals. We, as Americans, are undoubtedly losing our love of home, and our wanderings are perhaps becoming more extensive and general than those of any other nation, for every season shows an exodus from the larger cities. Another motive, which is often nothing more than a mere excuse, arises from the search for health. How sincere this always is I leave others to judge, but it is a matter of grave doubt whether people would travel as they now do if the craving for relief from suffering was attended by self-denial or very great personal inconvenience. The indulgence in small-talk which springs from ailments and weaknesses is for some an agreeable diversion. Lord Houghton, in one of his letters upon Cannes, says: "The two subjects of conversation are 'lungs' and 'anemones'—whether the former are really injured or whether one lady has found some variety of the latter which the other has not got." But the invalids we meet at the so-called "resorts" do not always confine themselves to these limited subjects. The hypochondriac finds victims who more or less willingly listen to his story or he amuses himself, where he can, by indulging in new and varied forms of treatment to his heart's content. The consumptive

passes his time in weighing himself repeatedly through the day, or gains the sympathy of those whom his condition and appearance attract. In many respects, in this country, the "winter-resort" is simply a transplantation of the "summer-resort" with all its customs and habits, differing from foreign watering-places and *spas*, which are for the most part distinctive. It is only about a quarter of a century, and perhaps less, since people in this country seriously began to find winter-resorts upon their own continent, and before that time the migrations were almost entirely to the Riviera, Egypt, and Algiers, and even now a goodly number of the very rich prefer European life to anything they can find here. The usual hegira includes several classes of people: the really ill, the convalescent, those with imaginary ailments who make trifling illnesses an excuse, and the pleasure-seeker pure and simple.

So far as the actual merits and advantages of different localities are concerned, more attention has been paid to the selection of climatic and atmospheric qualifications than any other, the first *desideratum* being warmth and sunshine, the next mineral springs; and if the place possesses one or the other or both, the advantages of gay life, scenery, and accessibility are considered. Of course, fashion stamps its impress upon this resort or that and weighs strongly with many people, and the public are exceedingly fickle in patronizing these places. But it cannot be denied that the provision of substantial and attractive improvements is always a determining factor, as is shown in Florida and California since the erection of the palatial hotels at St. Augustine and the huge caravansaries at Pasadena and elsewhere.

The histories of health-resorts and the agencies leading to their development are extremely interesting, and while the success of some of them is often accidental, this is far from being the rule. Thomasville, Ga., which is one of the most quiet and refined winter resting-places for Northern invalids, was started by one New York physician who was in the habit of going there for his winter shooting. Asheville, N. C., which twenty years ago was a squalid railroad village, has grown to a town of twelve thousand inhabitants, with no less than four or five hotels, and in this case also it was a gentleman from Philadelphia who in a most humble way laid the foundation for its present prosperity. Sometimes the medical profession is responsible for the creation of resorts. Atlantic City and Lakewood, N. J., which are of comparatively recent growth, were due to the quiet support of the physicians. The former was simply a New

Jersey sand-hill situated on the coast that is approached rather closely by the Gulf Stream; as if by magic it became covered with houses and hotels, the land now being immensely valuable. The project of development originated in Philadelphia, and the growth of the place was assisted by a number of physicians who received complimentary railway passes from New York and Philadelphia. This resort is frequented by a very diverse set of visitors, and unlike most others it has developed into a town of considerable dimensions. The Hot Springs of Arkansas, organized by a party of Southwestern physicians who secured concessions from the Government, is a resort of a very different character and almost exclusively frequented by men whose ailments are commonly the result of dissipation. It has lined well the pockets of its projectors. The methods pursued of inducing people to come are, to say the least, unique: there is a regular set of "runners" who go through the cars before the train enters the town, soliciting patients for this physician or that—a feature strongly suggestive of Chatham Street or the sailors' boarding-houses of New York's river-front. Colorado and California as winter health-resorts are patronized chiefly by persons with pulmonary diseases, and, strange to say, by a large number of English people, many of whom are sent directly there. At Colorado Springs and other adjacent places are not only English but foreign physicians, some of whom have left foreign *sanatoria* to practise in a new country.

During the past two years attention has been directed to a new part of the country which lies between the thirtieth and fortieth parallels and includes the East Tennessee mountain region, which had been shut out from the rest of the world since the end of the war. Thanks to the investment of English capital and the enterprise of a number of the leading medical men of New York and elsewhere, a superb hotel and *sanatorium* have been erected near Cumberland Gap, and an attempt is being made to follow the plan of some of the foreign resorts where a regularly organized "cure" is followed. It remains to be seen how fully this extensive enterprise will be patronized.

Our countrymen are much more independent in their selection of winter abiding-places than foreign invalids, for these, as a rule, have special instructions from their physicians, who are familiar with the adaptation of the desired climate to the disease—a matter that should be considered here more often, as the extremes in the United States are very great. It is no uncommon thing to find a consumptive seeking a high elevation, which he is obliged to leave because of the

hemorrhages that ensue, or of a person recovering from a fever who goes to a low and doubtful locality simply because it is warm. It is a matter of feeling and taste rather than judgment, and the medical man is often powerless to have his injunctions carried out. Then, again, recourse to springs is frightfully abused. In no place of which I am aware, except perhaps Cumberland Gap, are any of the methods in vogue at foreign *spas* regarded at all, and I know of no place where a systematic "cure" is possible. All these things rather diminish the value of resorts for curative purposes, and if people get well it is chiefly owing to the climate.

So far as the social side is concerned, by those of us who have been abroad it is difficult to recognize in American winter-resorts anything like the foreign life, for there is a paucity of amusement and a sameness which is deplorable; and we find none of the excitement and diversion that is obtainable almost everywhere in Europe if needed. Most persons who have idled away a winter upon the Mediterranean need not be reminded of Monte Carlo or Nice, the *fêtes* that are not found out of Catholic countries, the carnival, and the sprinkling of new faces and interesting people that flock not only at the Riviera, but at every continental resort. Our own places are literally without any of these features, and with the exception of a few localities in which cottages have been erected, there is no approach to villa life. There is no *spa* of which I am aware where there is a *Trinkhalle*, and the social diversions for the most part, beyond the "hops" in long, dismal parlors or so-called "private theatricals," consist in the grouping of guests about the fireplaces in the large halls belonging to many of the hotels. The *table d'hôte*, which is an important event of the day abroad and varies in its formality from the collection of "Cook's tourists" in the modest *pension* or cheap hotel to the dignity of a great Swiss hostelry, is nowhere found here. Perhaps much of the attractiveness of places abroad which are frequented not only in summer but in winter is due to the presence of nobility, which, of course, is missing in a republican country; but a faint reflex of this attends the advent of a "social leader," who has been turned to good account by many an industrious hotel-keeper. It is unfair to judge every one in this way, but it is undeniable that the receipts of a languishing hotel are vastly increased by the chatty letters of a "correspondent" who announces the arrival of half a score of people with fashionable names.

I have been asked, "Why, for instance, should a man go to

southern California, Colorado, or to Florida, or why should he go to one of these places rather than to any other?" From a medical point of view there is no doubt that the winter climate of southern California, with no sudden changes, where the air is warm and there is a peculiar kind of soft sea-breeze that belongs to the Pacific, is admirably adapted to a certain class of consumptives and to sufferers from organic nervous diseases. Colorado, on the contrary, possesses a high altitude, dry, clear, cold air, and stimulating influences like those of St. Moritz or Maloja, which are specially adapted to the person whose nervous system is depressed; but, so far as my experience goes, it is likely to aggravate nervous disorders with excitement, epilepsy, or chorea, or in fact any neurotic disorder, though there are exceptions. Certain parts of Florida are adapted to those who can stand an ordinary summer temperature, and if the drainage is good it has its advantages where the particular ailment is aggravated by cold. So far as the social aspects of the three places are concerned, there is a wide difference which it would be difficult to describe. There is much more permanency in the Pacific Coast life, and the same may be said of Colorado, while the health-resorts of Florida we know are largely given up to what hotel people call "transient trade." Few are aware of the existence in several places in Colorado of the most delightful colonies, recruited from England and elsewhere, where there is little fashion or ostentation.

The distances in our country are such as to demand an increase in the comforts of railroad travel. The companies are bringing this about, but much more is needed to reduce discomfort to a minimum. In the early days the very difficulty of access undoubtedly enhanced the pleasure of those who were obliged to take a stage-coach journey; but to-day all this is changed. Luxurious special trains, provided with every convenience, bring the different winter-resorts almost to our doors, and the tourist may enter his Pullman car here and not leave it until he reaches Florida twenty-seven hours later. As a dozen years ago this State was a *terra incognita*, the change seems marvellous. I understand that one company is about to inaugurate a still greater improvement by establishing a train of specially constructed cars for invalids, with devices for ventilation and a kitchen and an observatory car, which will obviate many of the present discomforts.

The meteorological disturbances have been so extreme, especially during this winter, that it is often impossible to fix with any certainty upon a particular locality for the invalid; for when we find that in

sub-tropical regions where, under ordinary circumstances, the orange and banana flourish, the thermometer takes a sudden drop and the mercury hovers about the freezing-point, the home fireside seems to be really the best place of refuge. There is none of the ordinary equability of climate in this country that exists on the continent of Europe, and which permits the medical man to regulate with some definiteness the migrations of his patients and to decide whether the Riviera, Pau, or Biarritz, or Algiers be the best place, so that after all we can lay down only general rules. The *desiderata* are, without doubt, a fair average of sunshine and warmth and dryness, which are to be sought in southern latitudes. Certain classes of cases need stimulation, and to these belong the anæmic and debilitated, as well as patients recovering from surgical operations or low fevers. For these people bracing sea-air, which may be obtained by a sea-voyage or by a sojourn at a coast-resort, is advisable; and if the debility be due to some pulmonary disease which has secured an obstinate foothold, when a tendency to acute relapse is not imminent, a high elevation is much better than any other, especially if the air is dry and pure.

Some of the places in the Engadine, such as Davos or St. Moritz, are found to be highly beneficial to patients with some forms of pulmonary disease, and such localities as Colorado, western North Carolina, and eastern Tennessee, where the winter temperature is not too low, very often effect a speedy amelioration and oftentimes the disappearance of consolidation which attends serious disease of the lungs. The benefits accruing from such a change are the gaining in weight and the disappearance of the cough and of other symptoms. This is due to several causes which are peculiar to mountainous regions. There are not only the dryness of the air and very great purity, but the delicate air-passages of the invalid are not exposed to the irritation from floating organisms and other substances, and there is a tonic influence in a high latitude which certainly favors assimilation and cheerfulness. In most mountain regions, especially at these temperate localities, the sunshine is not attended by great heat, there being a preponderance of the violet rays of the spectrum which have a beneficial chemical action upon the blood. It is a fact recognized by medical men that diseases attended by defective excretion, including rheumatic affections and diseases of the kidneys and liver, should seek low levels where the air is warm and dry. As an authority upon this subject has pointed out, it is difficult to find a locality at once dry, warm, and equable, for a high degree of warmth with corresponding

dryness is a necessity attended by "great differences between sun and shade temperatures and between diurnal and nocturnal temperatures." But this may be provided for by wearing woollen clothing and avoiding exposure after dark.

In regard to the advice to be given to nervous invalids, much is to be said and many questions are to be considered, for the indications, as we all know, vary very greatly. It is certain that many of these are so restless that mere change of scene and constant action are primary necessities, and it matters little where they go so long as they are comfortable and get mental recreation.

I have already spoken of the inadvisability of mountain resorts for a certain class of patients, especially for those who suffer from *locomotor ataxia*, epilepsy, and chorea, or whose ailments are likely to be aggravated by the rarified air of high latitudes. For hysterical or neurasthenic invalids, or for those whose morbid concentration is increased by loneliness or opportunity for reflection, it is hardly necessary to say that dull places are likely to aggravate seriously their depression.

There is much dispute as to the care of persons suffering from advanced pulmonary disease, but after all there are certain principles which govern the doctor and his patient in the selection of a winter-resort. It is well known that warm, moist climates like Madeira, Nassau, or Bermuda are best adapted where the cough is constant and what is popularly known as "dry," and that in the opposite condition a warm, dry climate is preferable. An English writer says that "cases of chronic phthisis without much fever, rapid wasting, or large and progressive destruction of lung-tissue are alone applicable for climatic treatment." The mistake which I think is generally made is that these patients are sent away from home when their disease has made such progress as to be practically in the last stages, and it is no uncommon thing to find many unfortunate sufferers dying in some out-of-the-way place several hundreds or thousands of miles from their friends and comfortable homes. For this reason no injudicious search for health should be made unless with the full approval of the family physician or some equally competent person, for there are a variety of dangers of which the patient is unable to judge for himself and which must be determined by some one conversant with disease and climatic influences. There can be little or no doubt that very often the discomforts of badly appointed hotels or *sanatoria* not only increase disease, but shorten life, and the pilgrimage becomes one of suffering or entirely barren of results.

It cannot be disputed that, in most cases, worries, excitement, and the discomforts incident to a temporary residence where all the comforts of home are missing are often prejudicial, and the benefits of a particular locality are greatly outweighed. An extended residence, of course, with adaptation to the surroundings is to be preferred, and to those persons who are really ill it is much wiser that they should settle down in one locality instead of migrating from place to place. There is no doubt that sometimes an acclimatization must be gone through with, and this occupies a variable period. I have myself known much harm to result from sudden changes from widely separated resorts, and it cannot be gainsaid that people who really suffer are made much worse by this restless and erratic transition. Of course this does not apply to some nervous invalids to whom variety is most important.

To invalids with well-established diseases there is no doubt about the desirability of a permanent home which is best suited to them. Of course this involves at times a species of exile, and such a compulsory removal from friends and family is exceedingly trying and inconvenient, for the locality which brings immunity from suffering and retards the progress of a particular disease is not always cheerful or congenial. The slavery which some pulmonary diseases implies, especially to people of moderate means, is apt not only to alter the life, but to crush the spirits of many a doomed one. I can recall the case of a very prominent young professional man whose metropolitan career was full of promise and who was obliged to seek a lonely and wild region as the only place in which he could live with comfort; whenever he returned to civilization he was subject to an alarming hemorrhage, so that finally he adapted himself to his enforced surroundings. All this suggests that health-resorts should be made as attractive as possible and that confirmed invalids should take more interest in the work of establishing *sanatoria* and hygienic villages. It is to be hoped that in various parts of the country more care will be exercised in the construction of hotels and that greater provision will be made for the amusement and comfort of searchers for health who are driven from their own homes.

ALLAN MCLANE HAMILTON.

THE COST OF SILVER AND THE PROFITS OF MINING.

"WHAT does it cost to open a silver-mine and take out a million dollars?" This comprehensive inquiry is said to have been addressed, some years ago, by a Chinese mandarin, through an interpreter, to an American geologist. The geologist, employed by the viceroy, Li Hung Chang, to examine some mineral deposits in Northern China, had just arrived in Tientsin. The occasion was the first formal interview between the geologist and a council of Chinese officials, held for the purpose of some preliminary discussion of the business in hand. The man of science was perhaps somewhat embarrassed by a question so unanswerable in definite terms, and his embarrassment could not have been diminished by the further inquiries and observations which followed, showing how much more was expected of him than he could possibly give. "How deep down must you go to get silver?" was asked without any satisfactory reply. "How deep must you go for gold?" with no better result. "How far can you see into the ground, anyway?" And on being told that the geologist's vision could not actually penetrate the crust of the earth, the mandarin added the remark, perhaps not intended for interpretation, but not withheld by the interpreter, "Have we brought a foreign devil here to tell us just what's on top? Any Chinaman can do that."

Crude and vague as the mandarin's ideas must appear to those who know something of mining operations, they are not wholly without parallel among people who are supposed to be better informed. The chief of the United States Geological Bureau was called upon officially, some years ago, to report the amount of gold and silver then available in the mines of the country or likely to be produced by the continued development of our mineral resources, a question practically unanswerable; and it would appear from the tone of some writers now discussing the silver question, and who seem to believe that the product of this country is costing but a few cents per ounce, that if they were called upon to reply to the mandarin's first question, quoted at the beginning of this paper, their answer would be very far from indicating the real truth touching the average cost of producing silver.

Much has been said lately about the very low cost at which silver is being produced, at some new mines in Colorado; and Mr. M. L. Scudder, Jr., in a series of interesting articles published in the Chicago "Economist," has set forth the results of his inquiries, from which it appears that at the Last Chance Mine at Creede, opened hardly more than a year ago, the average cost of silver produced (probably about one million ounces) had been twenty-four and one-half cents per ounce, including cost of houses, wagon roads, and other improvements; at the Amethyst, also at Creede, the cost had been forty-four cents per ounce, including all outlays for improvements; at the Mollie Gibson, at Aspen, the product of 1891, about two million ounces, had cost twenty-six and three-fifth cents per ounce, including all outlays for improvement and development, or sixteen and three-fifth cents per ounce for current costs of production alone; and for 1892, estimating monthly expenses at thirty thousand dollars and product two hundred and eighteen thousand ounces, the cost per ounce would be thirteen and seven-tenth cents.

Wide generalizations have been based on these figures, and the impression appears to be that these operations indicate the average cost of producing silver under existing conditions. But it is to be remembered that such ore bodies and such conditions are very exceptional, and in similarly exceptional cases in times past have always proved to be temporary. I do not mean that they may not yet produce large quantities of silver, and at a profit sufficient to enrich greatly their owners; but all experience shows that such extraordinary ore bodies are exhaustible, and that their very productive career is usually of comparatively short duration. Now, while such exceptional operations as these must, of course, reduce the average cost of the silver product during the period of their activity, they do not and cannot represent the general average cost, which, based upon the experience of all the producers, is far higher. It is, in fact, only the fortunate finder of a bonanza who gains any notable profit in mining the precious metals; it is almost always only in the hope of finding such prizes that people engage in the business; and to base an estimate of the average cost of producing silver on the record of the Mollie Gibson or the Last Chance is about as near the mark as it would be to take the fortune of the lucky winner of the grand prize in the Louisiana Lottery as a measure of the success of the average lottery speculator.

There is nothing new or unprecedented in the nature of these reported operations; on the contrary, the fortunes of silver-mining have

always run in that way, unevenly divided between the lucky few and the less fortunate or wholly unfortunate many. Not only so, but what is said now of the cheap cost of producing silver is equally true of gold. The mode of occurrence of that metal, not only in placers but in quartz veins, is perhaps still more likely to afford rich deposits which give their owners great and suddenly acquired profits. Some years ago a quartz mine in California, known as the Bodie, attained the distinction of producing more gold in a single month than had ever before been taken in the same number of days from any one mine in that gold-producing State. Its reported product for the month was six hundred thousand dollars' worth of gold. That means thirty thousand ounces. As the costs for that month were probably not far from thirty thousand dollars, the cost of that gold, measured in the temporary method applied to the silver mines now attracting attention at Creede, would have been about one dollar per ounce, or one-twentieth of the value of the product. This would be proportionately equivalent to producing silver, not at thirty cents per ounce, but at a little more than four cents per ounce.

But marvellously rich as are some of the great producers of silver at the present moment, there is no single mine in the country to-day —no one lode or vein—which is, even in a remote degree, comparable as a source of silver to the great Comstock lode, which was discovered thirty-three years ago and which has since produced three hundred million dollars to four hundred million dollars in gold and silver. Twenty years ago it was the great disturber of the silver market and the first cause of the depression in the value of silver. When at that time the so-called "Big Bonanza" of that lode began to yield its treasure, the astonishing development of the ore body seemed to promise such a production of silver that the metal might perhaps soon cease to be deemed precious. The actual yield of that ore body is now recorded at about one hundred and thirty million dollars, of which about forty per cent was in gold. This bonanza, the greatest of the Comstock lode, belonging to the companies known as the Consolidated Virginia and the California during its most productive period of about three years, when it was at its best, produced about one million tons of ore, yielding about one hundred dollars per ton, or one hundred million dollars, of which thirty million dollars went for costs and seventy million dollars remained for profits. Its product, therefore, cost thirty per cent of its value; the silver, selling then for about one dollar and twenty cents, cost between thirty-five and forty cents per

ounce, and the gold cost six dollars per ounce, being worth, say, twenty dollars. This was during the most favorable part of its record. In its whole career the product of one hundred and thirty million dollars afforded dividends of seventy-eight million dollars, or, deducting therefrom some small assessments, say seventy-five million dollars net profit, so that the total cost of precious metal from this source was over forty per cent of its value, equal to, say, fifty cents per ounce for silver. But this record was notably an exceptional feature of an exceptional lode.

The bonanza second in importance to the one just mentioned was that known as the Crown Point and Belcher, which produced about seventy million dollars and paid about twenty-six million dollars in dividends, which, with some allowance for assessments, would show profits equal to one-third of the value of the product and costs amounting to two-thirds of that value. This means that the average cost of an ounce of silver from this great bonanza was between eighty and eighty-six cents. In all the history of that great vein these—if we except the little Kentuck mine, which made about one million dollars profit—were the only two ore bodies which, in the long run, and on making up a general accounting from first to last, ever produced enough profit to equal or, in some cases, hardly to approach the costs collected in assessments by the several companies owning them. When we make up a complete account, covering the operations of the Comstock lode for thirty years, deducting the cost and the profit of the entire business from the value of the product, the assessments collected, and the dividends paid, it appears that the productive mines whose records are known have yielded about three hundred and twenty million dollars to three hundred and forty million dollars in gold and silver, and have paid one hundred and twenty-five million dollars in dividends. If from these dividends we deduct the assessments levied on the same mines which made the product, and on their neighbors so closely related to them that they must be considered a part of the same account, we have to diminish the one hundred and twenty-five million dollars by seventy-one million dollars, leaving a profit of, say, fifty-four million dollars; and if we go a step farther and take into account additional assessments upon mines of the same district, and really forming a part of the silver-mining enterprise in that neighborhood, we have to diminish the above-stated profits by twenty million dollars more of assessments, leaving a final profit of only thirty-four million dollars, or about ten per cent of the recorded product. By this account

the product would have cost ninety per cent of its value, which, taken at one dollar and twenty-five cents, would show that for every ounce of silver produced one dollar and ten cents was expended. If in our account we allow only seventy-one million dollars of assessments, the resulting profit of fifty-four million dollars would still be less than seventeen per cent of the whole product, making the cost on that basis, say, not far from one dollar per ounce for the silver.

The career of the Comstock lode is unparalleled, not only in the United States but in the world, when its yield is considered together with the time required to produce it. So far as the production of silver has affected its commercial value, this lode has had more to do with lowering the price than any other single source of the metal, and yet these figures go to show that the average cost per ounce of its entire product is considerably greater than the market value of an ounce of silver to-day. Its now visible or known resources are comparatively small, and the vein is looked upon at the present time as practically exhausted, and no longer a disturbing element in the silver problem.

I think it a fair generalization, based on wide experience, to say that those gold and silver mines which realize a profit on their product equal to one-third of its total value are prosperous far beyond the average. It is only the lucky finders of rich prizes who do much better, as in the now conspicuous instances before referred to in Colorado and in that of the "Big Bonanza," which for a time realized seventy per cent in profit. I think the records of precious-metal mines generally classed among the notably successful would show that the percentage of profit in the product rarely exceeds one-third, while in the majority of mines known as profitable it usually falls far below that proportion. The Belcher and Crown Point bonanza, although yielding profits at that rate when silver was selling at the old standard of one dollar and twenty-nine cents, would, judged by the dividends paid, have afforded no real profit with silver at eighty-six cents. As the price of silver at present quotations has fallen one-third, the majority of the mines which could at former prices realize a profit sufficient to justify the investment of capital in the business can now gain little or nothing, and many of them could only continue working at a loss. Many such mines have already ceased operations, while others continue, not because they are making profits, but because they cannot afford to stop while any reasonable hope remains for improvement in their fortunes.

The silver product of the United States for the calendar year of

1891 is estimated by the United States Mint Director at fifty-eight million three hundred and thirty thousand ounces of fine metal, representing, at the commercial value of silver during the year (nine hundred and eighty-eight thousandths of a dollar per fine ounce), a total of fifty-seven million six hundred and thirty thousand and forty dollars.

The "Engineering and Mining Journal," in its annual review, publishes a record of the dividends paid by mining companies during the same year, an examination of which shows that the mines whose product is known to be mainly silver paid dividends amounting to about six or seven million dollars, while other mines, producing a considerable amount of silver in combination with other metals, paid dividends of two or three million dollars more. A fair estimate of the total dividends of this list, derived from silver, would probably be between eight and nine million dollars, or about fifteen per cent of the total value of the silver product. This account may not be strictly accurate and may not show the whole situation. There may be some omissions; but very few important dividends escape attention, and the statement, as an approximation to the truth, has a significance worth consideration.

If the silver produced in 1891 was sold at about one dollar per ounce with a profit of fifteen per cent, then the average cost per ounce was eighty-five cents. Now, it is said that large quantities of silver were produced that year at twenty-five cents; but it may be observed that if one-fourth part of the fifty-eight million ounces were produced at a cost of twenty-five cents and sold at one dollar, the resulting profit would equal and perhaps considerably exceed all the dividends before referred to and leave no share of the realized profits to be derived from the remaining three-fourths of the total product. In fact, if all the cheap silver of the year only reduced the average cost to eighty-five cents per ounce, then a large amount of silver must have cost considerably more than the average, and probably more than one dollar per ounce.

Moreover, while there were perhaps nine million dollars for dividends, there was also an unknown but large amount of costs collected in assessments or some other form of investment chargeable to the year's business as a whole. These items cannot all be precisely known; the published assessments for the year on mines of silver and of gold and silver amounted to nearly three million dollars, or about one-third the amount of dividends, while costs collected in other forms might easily be as much again or more; so that taken into this ac-

count they would considerably reduce the fifteen per cent of profit apparent in the dividends.

The silver product of the United States for 1892 is not precisely known at the date of this writing. It will hardly fall below and may considerably exceed the product of 1891. The monthly averages of the market price of silver indicate an average price for 1892 of about eighty-seven cents per ounce. Supposing the country's product for the year to be sixty million ounces, its commercial value, at this average price, would be a little over fifty-two million dollars. The statement of mining dividends for the year, published by the "Engineering and Mining Journal," in its issue of January 7, shows dividends to the credit of mines producing silver mainly or alone amounting to about five million dollars, and to the credit of mines producing silver in combination with other metals further dividends amounting to about a million and a half dollars more, attributable only in part to silver. Allowing for some omissions, it is fair to estimate seven millions in dividends for silver, or thirteen to fourteen per cent of the value produced. If this percentage of the eighty-seven cents of value realized per ounce of silver sold, say twelve cents, fairly indicates the profit in the product, then the remainder, say seventy-five cents per ounce, would be the indicated cost, not including, however, anything for assessments levied or other calls for new capital invested, chargeable to the business and tending to lessen the net profit and increase the real cost. But, as shown in the case of the previous year, if a very considerable part of this product was produced at twenty-five cents per ounce, as many believe, or at any cost far below the average, then another considerable part must have been produced at a cost far above the average and, some of it, without much doubt, far above the average market price.

It is sometimes a question how far the cost of equipment and opening of productive mines or of their continued development, either during unprofitable intervals or, as often happens, long after their profitable career has ceased, should be counted in the cost of the product; or to what extent the fruitless outlays in unsuccessful ventures in silver-mining should be considered an item in the cost of silver. If all the silver-mining in the country were done under one management on one account by the Government or by one individual concern or corporation, the real cost of the product would be the total expense in obtaining it from all sources, both profitable and unprofitable; but no matter how wisely or well managed, there would inevitably be many

unsuccessful ventures and many fruitless outlays, none necessarily unjustifiable, but still disappointing in the final result, all of which would need to be considered in the final account. To reckon as the cost of production only the expenses of a mine during its productive period, without allowance for equipment, prospecting, and all necessary development, as some seem to think fair, is like counting the cost of a crop at only the expense of gathering it, without considering the cost of the property and of the cultivation necessary to its production.

Now, if the cost of producing silver has any bearing upon the questions at issue, touching its value and its relation to gold, these facts and figures are worth consideration, because they should tend to correct an apparently prevalent impression that the average cost of silver is far below even its present market price. These statements go to show that only the most fortunate producers, the finders of the great prizes, can produce silver at any large profit, while the average producer, especially at the present time, must content himself with a very small profit and be glad if he does not make a loss. Many of the silver mines are closed as unprofitable under existing conditions, and it is my belief that the majority of people whose money is now invested in silver-mining enterprises can buy silver in the market cheaper than they can produce it.

These figures show that the cost of the product even of the great Crown Point and Belcher ore body probably amounted to the market value at to-day's prices; that the average cost per ounce of the whole Comstock product of silver is probably far above the present price; and taking into account the whole situation, and especially if including the costs of the unsuccessful silver-mining enterprises—not the wild schemes, undertaken without good reason, which ought never to have been begun, but those justifiable ventures which ultimately prove to be disappointing, unprofitable, and costly—I think it doubtful if all the silver ever produced in the United States, reckoned at the old standard of 1.29, would, after deducting from its value the cost of its production, return the capital invested in the operation. The great profits of silver-mining go to the fortunate few; the average miner of the precious metals is not over-prosperous. Good mines are like the saints—"for many are called but few are chosen."

JAMES D. HAGUE.

THE CONDITION OF WAGE-EARNING WOMEN.

Our wage-earning women and children are grouped into five classes, New England being preëminently the textile district. Each of these States contains model industrial establishments supporting excellent tenements or separate homes for workers, libraries, clubs, even hospitals for the sick or the injured operatives, as at Lowell. Factory laws have reached their highest development in Massachusetts, other New England commonwealths lagging behind. There the sixty-hour week prevails, reduced to fifty-eight in Fall River; children under thirteen are forbidden in mills or shops, and for those under fourteen twenty-two weeks' schooling each year is obligatory; accidents must be reported and employers are liable for damages. Thirty-three inspectors, two of whom are women, enforce these acts.

Manufacturing New England, Puritan and homogeneous no longer, speaks a French *patois*. The influx of French-Canadians and their domestication and economic effect on wages began with the stimulus given to manufactures by the Civil War, when these operatives were brought and housed in hastily-constructed tenements, without drainage or conveniences, which still exist around many mills, a reproach to civilization. Setting up a tiny stove and spreading mattresses on bare floors, parents and offspring overran the factories, hoarding wages for a time, then returning home to buy a farm. Illiterate, living wretchedly, inspiring fear and aversion in neighbors, unfamiliar with the English tongue, they overran entire districts, and there are to-day "little Canadas" of crowded barracks owned perhaps by fellow-Canadians become investors, each house populated by from three to fifty families, who dwell under social conditions truly amazing. Eight married couples, besides six tenants, board in a tenement of three or four rooms, women sleeping in one apartment, men in another, their children left in Canada or farmed to aged care-takers. Only two of these adults can read, but all own bank-books and are industrious.

Higher-grade and domesticated Canadians purchase homes, support churches and parochial schools, French newspapers and social clubs; and they buy abandoned New England farms. Aggregate family

earnings reach the thousands, for fifteen pledges of affection surround many boards and twenty-one scions of the same parents is no rarity. Wherever this prolific race appears wages drop. With lower standards of living at first, and later with superior thrift, they underbid Nova Scotians, Irish, and English, becoming as formidable rivals as our bread-winners' other foe, the childless married worker—New Englanders being so often childless as to encourage divorce and threaten the perpetuity of the race.

Boston toilers winning industrial prizes share the city's intellectual life. Suspender-makers belong to Browning clubs, a necktie-worker writes magazine verses, a "button-holer" buys oratorio tickets. More than other wage-earners, Boston girls are homeless, dwelling in lodgings and eating at restaurants, neglected when ill, without resources if unemployed; their path shadowed by competitors eager to displace them at less pay—Italians or high-school graduates working for pocket-money. Merchants advertise for "girls who live at home, to learn the business"—a device to fill the firm's coffers by inveigling artisans and small shopkeepers into presenting their daughters with board that the daughters may engage for wages which will barely clothe them. This unwise, uneconomic gift from parents enables the daughters to set prices for adults at a figure on which no unassisted girl can live. Were subsistence charged for at home, the worker must earn more and spend less. Mechanics and clerks pay from their own pockets half the wages due their daughters from establishments such as these. Of 17,427 wage-earners, one-tenth earn but one hundred dollars to one hundred and fifty dollars yearly, less than two dollars and three dollars a week—a pittance that scarcely buys food. Truly self-supporting females are often in rags and broken boots, destitute of over-shoes, umbrella, or waterproof, and without flannel in winter.

Working mothers are equally wretched, spending for their own needs not five dollars a year, debts and insurance absorbing gains and the husband's ninety cents to one dollar and a half a day being insufficient to feed eight mouths. With envy such a wife describes "two old maids" who have laid by "a b'ilerful o' money." For herself, until her "young ones" labor there is no outlook, only fear that "Frenchy in the next alley" may take away her six looms.

Nothing being saved toward marriage, newly-wedded couples buy furniture on usurious instalment plans, the bride weaving to meet the payments. Children come fast, illness and death occur, grocer and landlord clamor; furthermore, loss of employment befalls even

prudent, industrious husbands. Then the already overtasked mother leaves one child in charge at home and returns to the mill. What happens? In a hovel one day I saw a maid of nine with five younger dirty toddlers in line before her, weeping loudly. She was beating each in turn with a heavy leather strap. "They needs it," explained the tiny guardian. "Ma, she hollers at 'em, but I ain't got no big voice like ma, so I lets go at 'em with the strop three times a day."

Native New England workers are not extinct, and on them devolves the care of parents and dependents. That industrial men support the aged, orphaned, and helpless is a popular fallacy. Since women have gained independent livelihoods, men shirk family ties, throw off their parents, marry rashly, and often disappear when an heir is born, most mothers of *crèche* children being deserted wives.

The second group of working-women focuses at New York, with environment wholly urban, a congested industrial population complicating the economic problem. Bad factory or home surroundings intensify the life-struggle, offsetting higher wages, factory supervision, and just and liberal terms of employment. Here reckless competition and middle-men cut prices; here immigrants with low standards and of temper alien to American character submerge all callings and "freeze out" domesticated workers who contribute to our national character traits and capabilities which strengthen our civilization. Here mercantile houses offer as wide a field for abuses as for advancement, and unscrupulous dealers cheat, oppress, and decamp without paying employees. Finely equipped, admirably conducted factories and shops in every industry are flanked by hideous rookeries.

Of late, excellent factory laws, enforced by ten men and eight women inspectors, have improved shop conditions in New York and Brooklyn, reducing child-labor fifty per cent. Children under fourteen are excluded from manufactories, also those under sixteen who cannot read and write English. Though education is compulsory, insufficient school sittings reduce the benefits of this provision. The present statutes are defective, too, in omitting mercantile firms from responsibility to the law and in failing to protect adults as well as minors by the ten-hour clause, since not otherwise can sweaters be prevented from driving hands sixteen and nineteen hours a day during many successive weeks, seven days in the week at that.

Native workers of native parentage are scarcely found, the best of this class having risen above manual into semi-professional vocations,

and those less plucky and ambitious having yielded to our assimilated immigrants in qualities which command success—endurance, determination, adaptability, thrift, and energy. Certainly the American native for two generations is not found at the top. Forewomen, head dressmakers, drapers, buyers, higher-paid saleswomen, are either of foreign parentage or outright foreigners. The native is found often at the bottom. Unmarried or widowed, gaunt, hollow-eyed, bitter against the hordes who, subsisting on scraps and working for a song, rob her of bread, she still bristles with prejudices, will neither consort with Catholics nor be "bossed" by Jews. Unable to pay board by a saleswoman's wage on which her Hebrew neighbor thrives, she drifts into a cloak-shop, and stranded in dull season, finishes knee-breeches in a garret for six cents a dozen. No friendly working-girls' club can lure her, no industrial millennium will dawn for her, and her sister with less pride and stamina sometimes sinks into pauperism or prostitution—where Jews are rarely seen.

Two types of wage-earning capacity congregate in cities—the ablest, busiest, most fortunate, and numerically the stronger; and the neediest, idlest, most incompetent, who hang on the outskirts of trade from want of energy to penetrate it or from inadaptability to new surroundings. All remunerative pursuits attract recruits who in the absence of trades-unions undermine wages by competing at lower rates. Wherever the rewards of industry are greatest competition is fiercest, and no woman's place or stipend is safe or fixed, each individual being but another atom flattened by livelier protoplasm.

True, in every metropolis many girls earn good wages, live comfortably, save, and dress well. But consider home conditions where two million souls inhabit tenements! The belongings of prosperous bread-winners mould in wretched, unlighted rooms of buildings eight stories high and twenty feet broad, inhabited by from thirty to seventy families, with a rear tenement three yards away and a third huge hive behind, swarming with people and reeking from neglected vaults. Women who must climb home over the bodies of drunken tramps asleep on the filthy stairs take little pleasure in a piano whose music is drowned by the orgies of fighting neighbors. Mattresses, by day strapped to doors or hung out of windows, at night cover tenement floors to pack in hundreds of men and girls—illegal lodgers. By the census of 1880, more than eighty-two per cent of New York households resided in dwellings containing three or more families. Recent comparison by the Massachusetts Bureau of Statistics of assessed value

and rentals of six hundred and forty-six houses in bad sanitary condition in Boston proves that the incomes from these death-traps average twelve per cent on assessed valuation, reaching in many cases thirty per cent and even forty-nine per cent. In New York, where the least habitable dwellings are the most profitable to landlords, Trinity Church itself owns unsanitary tenements without water above the second floor, and recently won on a technicality a suit brought by the Board of Health to compel the corporation to place water on other floors.

In the poorest quarters of foreign cities—Whitechapel in London, Glasgow, Rouen, Naples—I saw no such concentration of squalor, filth, airless dark pest-holes, foul closets and sinks, such massing of human beings within narrow, damp, windowless walls as exist in New York tenements. And I busy myself only with workers—women and children following a recognized occupation while employment offers or health permits—not with charity cases, the sick, the unemployed, the criminal classes. I "slum" because wage-earners must live in the slums—not always full-time workers, however, since laborers at low pay not only get odds and ends of work, but have also such debased standards of comfort and so few wants above animal wants that three or four days' gains keep them a week in their miserable fashion. Such desultory intermittent bread-winners supersede the industrious, under competitive methods, by hiring at starvation rates and levelling all pay to their wretched requirements. The moral points itself: increase standards of comfort by educating and uplifting the masses and, so far as economic laws allow, wages will rise.

The third industrial group sweeps westward, Philadelphia leading in population and in the number of shop-workers without male providers and therefore self-supporting. Throughout Pennsylvania, in Baltimore, Buffalo, Cleveland, Indianapolis, and Louisville, while thousands of female wage-earners must work or starve, other producers are partly maintained by iron and railway employees, mechanics and skilled laborers, for whose womankind daily toil is not indispensable, although the wife's or daughter's gains change a precarious into a comfortable family existence.

Notwithstanding economic supremacy, Pennsylvania has no factory code. In 1889 an act was passed restricting the labor of minors to sixty hours a week, excluding children under twelve from factories and stores, providing for the safety of women and juveniles, and appointing five inspectors. But unscrupulous employers may and do

work minors twelve to sixteen hours daily if a mill breaks down, and the hours that adults are required to toil are unlimited. Loathsome tenement factories hiring less than ten persons are free from inspection, and payment of wages semi-monthly is evaded. Maryland's ten-hour law applies only to minors.

Though the tenement nuisance taints every city—thirty-three per cent of these structures in prosperous Buffalo being highly unsanitary—all this region is the paradise of separate homes. In 1880 less than five per cent of Philadelphia houses held each three families or more, and eighty-four per cent were occupied by single families. Such social surroundings mitigate the lot of woman-drudges and child-slaves; but struggle for self-maintenance always means hardship for this weaker economic element. Native workers preponderate, mostly country girls, a large percentage of whom lodge and board. The moral tendencies of bread-winners here and in Baltimore are high, many toilers teaching in Sunday-schools and zealously helping their churches, practical Christians "giving to the Lord" the literal tenth of scant incomes. A mother and daughter in Charleston with combined wages of five dollars a week set aside fifty cents weekly for the church before buying food, and a Fall River weaver with four to support on three hundred dollars a year gave always his tenth. Catholics are fully as liberal.

While the great textile mills of Philadelphia are unsurpassed, other mills and factories there are unsanitary and without separate closet accommodations for women. Much woollen yarn is made by such juvenile labor that the product is bad and causes woollen and carpet weavers elsewhere to be fined. Cotton factories around Baltimore provide good homes with gardens, libraries, and schools; illiteracy, nevertheless, is still rife, for here and westward first appear the "poor whites," as unlettered as peasant immigrants. Factory supervision not existing, children under twelve labor illegally; four-year-olds shell pease and stem strawberries in dirty canning factories among six hundred polyglots from five A.M. till night. At work in tobacco little ones displace the adults, and glass-manufactories notoriously violate New Jersey and Ohio child-labor laws, the strictest yet framed.

At work on clothing and underwear wages have fallen literally to a starvation point, a fact incontrovertible, although families half-supported by father and sons grow rich at such pursuits. Factories turning out underwear and overalls so specialize employment that the strain shatters the operators' health, in spite sometimes of shop com-

forts. In Quaker villages and Bohemian and Polish colonies, partly maintained home-workers make a dozen garments for the price due needy seamstresses for one. Men's shirts at forty-nine and thirty-seven cents a dozen, men's drawers at twenty-seven cents a dozen, and thread, machine-rent, and expressage deducted—these rates, accepted for pocket-money, become the highest wages that can be obtained by immobile self-supporting labor excluded from factories because of invalid or infant dependents. "Wholesalers" abandon manufacturing to escape wear and tear, rent, and changing patents in machinery, preferring profits through the sweater, though professing to desire organization among needle-workers to resist present killing rates. This organization—useless if it fail to comprise the homes and tenements—is unlikely to occur. To further it is one of the holiest missions of the century.

The Southern wage-earning group presents unique conditions. New occupations—any occupations indeed—for women are a boon to this impoverished region. Breaking down old traditions that labor is menial and degrading, promising industrial independence, providing employment alike for Negroes, poor whites, farmers' daughters, middle-class families, and needy ladies, paying trades and gainful pursuits in the New South bring a righteous emancipation. The home-labor supply being unlimited, cotton, coal, and iron being cheap, and the cost of living being lessened by a mild climate, industries grow apace; and notwithstanding the inertia characteristic of agricultural countries and increased by slavery, the centre of gravity of the population is shifting, cities are absorbing population from the rural districts, small tenants are deserting their holdings to crowd the homeless and destitute into manufacturing centres, where some become good operatives and acquire a competence, others work fitfully, and many live by the toil of very young children. Ownership of homes has ensued to a certain extent, but there has been a greater stimulus to corporation houses and villages, some excellent, some sadly disgraceful. Nowhere is education compulsory; the public schools, new and ill-provided, fail to reach vast numbers even of the white children, and illiterate poor whites neglect frequently the teaching provided, while the blacks monopolize it. Mississippi and Georgia, leading where Northern States have not followed, have established admirable industrial and trade schools—*not* reformatories—for needy white girls. The weekly working hours in the South

average seventy-two, and to secure half-time Saturday, children and adults labor thirteen and fourteen hours daily in mills and stores. Georgia, more advanced than New York or Pennsylvania, limits toil for adults to sixty-six hours a week; but children seven and eight years old are permitted to drudge eleven hours a day. Virginia's law, often violated, excludes children under twelve. Louisiana possesses a fine factory code and the ten-hour day, without any enforcing power except the police. In other States the straggling enactments recorded are frequently disregarded, State control being practically a dead letter. Consideration for women is always shown, and the best employers shorten the working day and pay their operatives weekly.

The poor white, bare of comforts and often ill-paid, has in the Negro an industrial rival who easily subsists on less and underbids her at laundries, tobacco-factories, and in sewing. Higher-grade Southerners seek employment, even against the family wish, at clerking, dressmaking, patent medicines, binderies, textiles, box and cigarette factories, free from the blacks' competition, earning pay enough to lessen the pinch of poverty. Tobacco affords a lucrative pursuit without odium, darkies appearing only in its lowest branches; and in a model Richmond factory the cigarette-girls equal the best Northern workers in position, manners, and education. Nowhere else in the world do so many well-bred women, bankrupt and bereft of male providers, labor at manual callings as at the South, pursuing without loss of caste vocations which elsewhere involve social ostracism.

The last gainful division belongs to the Northwest and half-European cities like Cincinnati, St. Louis, and Chicago, part of whose foreign protelariat pursues un-American ideals of comfort and morals. As in New York, conditions characteristic of life in all big cities appear to be, and yet are not, disadvantages inherent in labor itself: tenement abominations, high rents, the "submerged tenth's" importunate rivalry depressing wages and debasing ethical standards, the rush for gain trampling out justice and humanity. Sweaters and contractors swarm; tenement workers delve far into the night, sometimes alongside the corpse of some poor baby that died of inanition. Separate homes are less infrequent, air and light more plentiful than in New York; yet many streets consist of ill-constructed houses holding each from three to eight families—a population in degradation.

No factory laws exist in Illinois, but Chicago has municipal regulations enforced by inspectors of both sexes. Missouri mills run

twelve hours a day. Such restrictive statutes as Western States have passed, being for the most part unaccompanied by supervision, present few obstacles to hard or unprincipled employers. All-night work is sometimes required of women, and juveniles of tender age are employed in many industries. A recent Ohio enactment empowering inspectors to abolish child-labor in dangerous and unhealthful spots has done much to root out this evil. Natives with difficulty hold the best places against the higher-class immigrants who are the back-bone of the Northwest's wonderful development; but the lower working class, coming of pauper stock in the Old World, remains illiterate and untrained, without attachment to our soil or institutions, demoralized by sudden liberty and hostile to our labor ideals. Even its Americanized offspring, after the sterile, misdirected teaching of public schools, are difficult to manage, and employers have recourse to harsh and unscrupulous methods. Great is the need for skilled labor. Incompetent, exacting, unreliable is that which offers; hence are bred antagonisms such as the kindest and justest proprietors cannot dispel. Capable workers suffer from fines and restrictions aimed at the careless and untrustworthy; "docking" for lost time creates discontent, and petty, tyrannical rules diminish the toiler's self-respect. While wages are better than in the East, living is dearer. From the partial adoption and abuse of foreign customs, Sunday dance-halls and theatres, with bars attached, attract the rougher work-girl. Numbers of virtuous bread-winners, however, contribute regularly to the family support, work under just and liberal employment, live in fairly good homes, and in due time marry. But the same class that suffers in the East suffers more in Western cities from the sharper, unworn wheels of the new industrial Juggernaut.

Sociological students observe a marked awakening in the employing class, with improved home and factory conditions for workers as the result. Proprietors see that contented, educated, progressive help is cheapest. Some firms allow operatives to share in profits; others build model working-women's homes or attractive industrial settlements, founding libraries, institutes, clubs for workers, and gymnasiums. An increasing number of employers pay for over-time, holidays, and vacations, furnish tea at noon, continue wages to the sick or aged, and act always as their employees' best friends.

On the other hand, factory and shop conditions are often shocking, and the strain of most callings is increasingly relentless, so great is

the speed of machinery. Few work-rooms are ventilated and in half of them the occupants are overheated or chilled. The light is often wretched, the gas is destructive to the sight, and the air is contaminated by overcrowding. Closets, generally filthy and inadequate in number, stand in these packed work-rooms and are frequently used by both sexes, while the sinks, sole water-supply for hundreds of beings, are placed at their ill-smelling doors. Whole buildings are polluted by unscreened closets on public landings. Moreover, a tardiness of five minutes or more is "docked" at rates exceeding thirty-fold the hourly pay, but over-time without remuneration is required night after night. Workers are needlessly kept waiting for materials and mulcted for steam-power, machine-rent, thread, and tea. Foremen and forewomen behave sometimes tyrannically, and agents of big corporations steal from two to four hours a week extra work from operatives and boast of cheating prosecuting inspectors.

Happily, factory restrictions become more rigid, although confined to few States and there inferior to the radical English laws; but thoughtful proprietors accept them with better grace and voluntarily provide suitable accommodations for women. Their individual care renders objectionable callings more profitable and less exhausting than crowded "genteel" pursuits. Cotton-weavers at Lowell, rag-sorters at Cumberland Mills, Maine, smoking-tobacco packers in Louisville, have better homes, steadier and less trying work, more recreation, greater chance to save and to marry well than saleswomen in cities at higher salaries. In "fashionable" establishments, unpaid over-time and theft of wages are not uncommon, the tension is greater, and sanitary conditions are often worse. Lunch-rooms separate from working quarters and neglected closets are unusual; workers eat amid machinery or in gloomy and damp rat-infested basements of mercantile houses. Fine shops and factories are still built without decent conveniences for women, only the law's strong arm forcing owners to furnish these essentials. New York State now enables her inspectors to require dressing-rooms to be added to shops and factories, and henceforth girls need not outrage modesty by putting on and off their working clothes before men.

The dangers are manifold to which wage-earners are exposed. Health is wrecked by constant sitting or standing, spinal disease follows on unnatural positions, limbs are distorted by atrophy or overuse, some toilers reaching up all day, others stooping over, others on all-fours. Bad light impairs the sight, the roar of machinery destroys

the hearing. Consumption results from inhaling dust, from overheating or exposure and wet spinning. Rag-pickers contract contagious diseases and nicotine shatters the nerves of thousands. And worse, insecure floors, shaken by looms or presses, fall and kill operatives, or elevators descend at the only ingress to business blocks, striking the unwary. Unguarded hatchways yawn in many rooms; belting is not shielded; stairways are rickety and wholly dark, winding around elevator shafts, death-traps even in absence of fire. In deadly occupations like tile-making, lead poison ends the worker; and in type-foundries, brass-beating, frame-gilding, breathing metal dust is destructive. From applying phosphorus to matches, unless extreme caution be used, rotting of the jaw ensues, causing death. Dust of cotton, flax, bagging, and rope-mills, soldering jewelry with the mouth at the gas-jet, dyes of feathers and flowers—do these hurt less fatally because no blood follows, as when fingers are cut off in stamping-presses or the arm is torn away by unguarded machinery?

For the distressing consequences of child-labor parents are responsible equally with sentimental or avaricious employers, who argue that the little one's pay is needed at home or hire it at less wages than adults demand. Such cheap labor is the costliest, almshouses and hospitals teeming with those who in youth were factory children. The ten-year-old spinner becomes stunted in mind and body and is forever incapacitated from doing an adult's full work. Accidents are appallingly frequent to juveniles tending machinery or working at boiling-vats or molten metals. If an arm be thrust impulsively among moving wheels, if the head be turned from the cutting-press, or if the hand and foot fail to act in concert, the fingers are severed or the whole hand chopped off. "Carelessness," cries the employer. Laws should forbid using children where danger is incessant and accidents unavoidable except by the exercise of extreme caution, for foresight is lacking in the young. Premature toil, nearly always under unsanitary conditions, affords no compensating training. Tending machinery, washing bottles ten or twelve dreary hours does not stimulate, but dulls, the faculties. Besides, parents become morally worse for relaxing their efforts to support the family and spend on drink or extravagance the little drudges' gains.

Grant that the unemployed reap fleeting benefit from their children's toil. Release the infantile producer, and the number of the unemployed will dwindle, since restrictive child-labor laws reduce competition and create work for adults. The state, having an interest

in its future citizens, should guard those in shops against dwarfed bodies and minds, mutilation and distortion and degraded spiritual tendencies which follow ceaseless drudgery in childhood.

In pursuit of a livelihood, the hope or ultimate intention to marry is a drawback to woman's success. She enters any vocation half-heartedly, not as a life career, but as a temporary stop-gap. Abandoning her trade for marriage, years afterward, perhaps, she returns to it an invalid and with dependents, her hand robbed of its cunning; and she must take her place at the bottom of the ladder. Economically, indeed, she is yet an industrial makeshift, rarely displacing man except at half his pay. Again, being unorganized, women cannot fight. Such trades-unions as dare form are, for want of leadership, scotched by hard-hitting manfuacturers at one blow, few associations surviving one formal complaint or strike. Shoe and tobacco unions have obtained substantial results in shortening hours and raising pay. Some localities and industries need no unions; but trade-workers, cooperating for defence here, as in England, might achieve enormous benefits for female wage-earners.

In the intermittent character of woman's toil lies its greatest peril. Textile work continues the year round; but not so millinery, dress, cloak, shoe, and umbrella making, and fur-sewing. Summer and winter hosts of unemployed knock at shop and factory doors, clamorous for work. They lodge, meanwhile, on the charity of families as straitened as themselves. Shabby and cold, they are kept up on strong tea. "Get thee to domestic service!" cries one class of reformers. How? Where? Employment-offices are often notorious frauds. Factory ways these pitiable beings know, not kitchen ways. Who wants rags and inexperience? Besides, independent gregarious shop-life draws like a magnet away from mistresses' authority, long hours, and night and Sunday duties in the solitude of the distinctly menial position which, truly or not, is deemed a barrier to social advancement and desirable marriage. It is when nothing has been laid by from previous scant wages, when debt is pressing, when even jacket and shoes have not been paid for, but are still the property of vendors on the instalment plan, that the immorality of work-girls begins. Is it not often the instinct of self-preservation?

Our wretched competitive system, with its hundreds of thousands of piece-workers taken on for a busy season and then dropped when every steady place is preëmpted, causes some bread-winners to go upon the

streets. When scores of homeless girls, girls who support dependents, are turned off on Saturday night in cities with the notice, "No more work," vice gathers in its victims. The marvel is that they are so few, and that the best go back to respectability as soon as employment invites. Saleswomen at three dollars and four dollars a week, compelled to dress well and pay board, if homeless when "furloughed," face penury or prostitution. The vast majority choose want rather than dishonor. Many of our workers, I believe from wide observation, never satisfy the pangs of hunger. Who wonders that one in a thousand, quite overwrought, deadens her cravings with drink or sells herself for warmth and food? Occasionally, well-paid wage-earners, exposed to temptations unknown in sheltered homes, drift into easy relations with men. Exceptions among the foreign element, also, live by foreign codes on elastic terms; but women conforming to such traditions of morality are lax because of foreign habits, not because they are workers. Our bread-winners are, I contend, as chaste as our middle and leisure classes, if for no other reason than that they are busier and necessarily more self-denying.

The United States Commissioner of Labor shows that women, counting both skilled workers and little girls, earn five dollars and twenty-four cents a week. Wages are not regulated by the best employers or dealers, but by the selfish and mean speculators, corporations, unscrupulous cutters of rates, sweaters, and contractors. It is an open question whether woman's pay is not falling, cost and standards of living considered. Could partly-supported labor and children be eliminated, shop-employees would get higher rates. Still there are other economic anomalies that affect women's wages. "Wholesalers" and manufacturers shut up their factories and "give out" everything—umbrellas, coats, hair-wigs, and shrouds—to be made they know not in what den or wrung they care not from what misery. There is needed a sense of personal responsibility among merchants and manufacturers. A stringent law firmly enforced is a lively conscience-finder and abates many evils. No sooner had the Governor of Massachusetts thundered his edict against sweat-shops than wholesale dealers "fairly fell over one another" in assuring the chief-inspector that they would have no more clothing made amid tenement filth. Again, wages are depressed by over-stimulating piece-work and its unscrupulous use by proprietors who hesitate to confess paying women only three dollars or four dollars a week, yet who scale prices so that only experts can earn this sum. Many employers cut

rates as soon as, by desperate exertion, operatives clear five dollars a week. Then, underbidding from the unemployed is a fruitful source of low wages. While immigration flows unchecked—capitalists favoring a superfluous labor supply—the number necessarily idle will increase. Massachusetts has twenty per cent of her workers unemployed. One-fifth of our bread-winners stranded, jumping at the job of more fortunate sisters who relax their strain—such is Mill's "illusory freedom of competition"! This hungry contingent, reinforced by half or wholly supported home-workers, causes a precarious tenure of employment and a fall in prices. Lastly, incompetence plays havoc with wages. Excessive subdivision of labor following the use of machinery incapacitates for all-round work. Running presses or sewing long seams makes automatons, and our bread-winners do no one thing tolerably. Public-school graduates are falsely educated, *déclassés*, unfitted for manual pursuits, while the immigrant throngs are less adapted for intelligent service. They are in the lowest scale of apprenticeship, and their wages, pared down by pitting woman against woman in this lowest apprenticeship grade, fix the scale on which permanent remuneration of industry is based.

Of remedies, a capitation-tax on immigrants would give fair play to domesticated workers, and industrial teaching would lift them and their competitors above this apprenticeship stage. Trade and housekeeping schools would make dependent females self-supporting, while manual training in public schools would develop faculty and create power. Children of the poor would remain at school after the age of twelve if parents knew them to be acquiring arts which secured self-maintenance. Domestic service can be dignified and false distinctions abrogated between saleswomen and cooks or maids by raising cooking and household work into a trade or profession. Organization and trades-unions embracing tenement drudges and village home-workers should be encouraged, and half-supported females should be discouraged from competing in industry, frowned down and shamed unless they worked on a business basis for wages enough to board and clothe themselves, with a margin for sickness, incidentals, and saving. Again, the woman of leisure ought to know the real condition of the toilers of her sex and to use her social position to influence public sentiment in behalf of reforms or to shape remedial legislation.

Factory laws and inspection are both remedial and preventive and need to be adopted by every State, as uniform in character as industrial interests admit. Enactments should protect all toilers, young,

adult, aged, even the unborn, prohibiting pregnant women from working for a period before and after child-birth. Seats for females should be everywhere furnished, hours should be shortened, child-labor should be excluded, the age of admission to mills advanced, overcrowding prevented, sanitation secured, fines and impositions controlled, dangerous callings surrounded with safeguards, and damages paid for maiming and death. Landlords should be held responsible for faulty building, unsafe stairways, inadequate heating, and improper plumbing, so as to give tenant manufacturers no excuse for bad surroundings. In houses and tenements notoriously unsanitary rents should be voided, especially where tenancy is a condition of employment. Ideal landlords scorning unjust gains create ideal tenants, and employers who value human beings more than dollars, who deem the welfare of the employed more important than an extra product, make grateful and prosperous workers.

CLARE DE GRAFFENRIED.

AN APPEAL TO RETIRE GOVERNMENT PAPER MONEY.

It is strange that there should be such unrest in the business world when all statistics show that there is great prosperity. To the question, why this is so, the universal answer is that the Government has issued, and continues to issue, paper money based on silver purchases of which the coined dollar is worth about sixty-five cents. At present the danger is that the continuance of such large silver purchases will unsettle confidence in the ability of the Government to maintain its paper issues equal in value to gold. In view of the exports of gold when imports are looked for, there is reason for this apprehension. Now, in contemplating this situation, as a retired merchant, I cannot help asking, Is it really the silver question which causes a lack of confidence?

Financially the country is in a very sound condition and has been made sick artificially by maltreatment. The root of the evil is in enacting laws which have misled the people. The issuing of legal-tender notes is the beginning and the principal cause of our trouble. After the discovery that it is very easy to get these notes printed, the demand for more of them has continually increased. Paper money on a silver basis opened the way to keep the printing-presses of the Government going, and half the people cannot get enough. The Government has, by the issuing of paper money, gone out of its legitimate way; for the Constitution sanctions coining money, but not manufacturing money.

The question now arises, What is the remedy? There is a remedy, and I think I can show that it will act beneficially in every way desired by the North and the South and by the East and the West. My proposition is that an issue of five hundred millions of bonds be made under the following conditions: (1) That the bonds be issued at par, payable at the pleasure of the Government in gold coin, principal and interest in registered and coupon forms; (2) that the bonds bear interest at the rate of two per cent per annum and the interest be payable quarterly; (3) that the bonds be receivable by the Government as a basis for issuing national-bank notes according to

present laws; (4) that the Government should receive in payment of these bonds any Government paper currency or coin or national-bank notes; (5) that all Government paper money received in payment of these bonds be cancelled and no more issued (in case of coin or national-bank-note payments the Government should cancel an equal amount of its paper currency); (6) that the Government should stop purchasing silver and issue no more coin certificates in payment thereof; (7) that all laws enacted for keeping a reserve in the Treasury should, being useless as soon as all paper money is cancelled, be void.

What would be the results of this? The Government owns at present about seven hundred millions of metal in gold coin, in silver coin, and in silver bullion—more than sufficient to pay on demand all gold certificates and all silver certificates and all coin certificates lately issued under the act of 1890. The issue of five hundred millions of bonds is much more than is needed to retire every legal-tender note outstanding, of which there are now about $332,000,000.

Would this withdrawal of all Government paper money create a shrinkage in the currency? It would not, because for every dollar of paper money withdrawn there would be either a coined dollar paid out or a national-bank note issued; and there being no use in keeping any coin as a reserve in the Treasury, the consequence would be a steady increase of good money.

Would the people be willing to redeem the silver dollars of which there are more than three hundred millions in the Treasury? Since under the proposed law there would be no more paper money issued except national-bank notes, and since there is no note issued smaller than a five-dollar note, the consequence would be that small change would be everywhere so demanded that the supply would be soon exhausted and the people would be anxious to have plenty of silver dollars. What would the Government do with the silver bullion of which it owns at present one hundred and twenty-five million dollars' worth? By the time the silver dollars are all paid out the Government should be authorized to coin more dollars. The Government being rid of its immense quantity of silver coin and bullion and the money in circulation being of the best kind, there is hardly a doubt that gradually the market value of silver would approach the value of one dollar in gold per ounce.

As to whether there would be any need of another conference with other nations in regard to silver or to establish a universal standard for money, it may be said that, while the United States should

always act for the good of all the people provided we are invited to such a conference, there will be no more need of the Government's making any effort in that direction nor of taking the initiative.

Would the people subscribe to such a loan which yields such small interest? The loan, although yielding but a small income, would commend itself as very valuable because it would be available for the issue of national-bank notes and for the investment of large estates, being free from any taxes, and it would offer an opportunity to those people who have hoarded gold, distrusting the present paper circulation, as much safer to keep; and in the form of a registered bond it would be of no value to a thief. The expectation is that these bonds would in a short time sell in the market at a good premium. These bonds should be offered by opening subscription-books all over the country through the Treasury and the sub-treasuries of the Government and through all the national banks; and a subscription with a deposit of ten per cent in cash or in Government bonds should be accepted as binding on the Government to accept. In this way all subscribers without much outlay would give the Government time to prepare the national-bank notes, which notes the Government could at once accept as payment for the bonds, and the bonds at once be put in the title of the bank and kept as is usually done in case of a new issue to national banks by the Government. The bonds being issued in sums of fifty dollars and upward would offer a good investment to people of small means, and these people should have the preference to large subscribers in case a larger loan should be subscribed than five hundred millions. On the other hand, it would be expected that the banks, the life-insurance companies, the savings banks, financial institutions, business houses, and investors of every kind would come forward with liberal subscriptions to the national loan, as it is in every way to their interest to keep the credit of the Government good and to make every dollar which they now have invested as good as a dollar in gold.

The different issues of paper money existing at a recent date which would be cancelled consist of—

Legal-tender notes	$332,084,234
Silver certificates	324,552,532
Treasury notes, Act 1890	125,000,000
Currency certificates, Act 1872	10,550,000
Gold certificates	140,137,889
Total	$932,324,655

The Government had at the same date as assets to redeem this amount of paper money—

Gold and bullion	$239,226,561
Silver dollars	327,149,533
Silver bullion, Act 1890	124,806,693
Subsidiary silver	11,499,579
Total	$702,682,366

The Government, after deducting all its present holdings, has need of the proceeds of the sale of only about $230,000,000 of bonds, and according to this exhibit there is really no need of such a large issue of bonds as five hundred millions.

The difference between the proposal I make and the proposal simply to stop the purchase of silver is very great, although both aim at the same result. While merely to cease purchasing silver will have the effect of injuring the silver producer, because the price of silver would surely go down in the market after the repeal of the purchase act, the plan that I propose would have the tendency of making silver stable for the present, with a sure prospect of its enhancement in value as soon as the loan is made.

According to the report of the Director of the Mint, the amount of gold assumed to be hoarded away on account of the present distrust of the currency is between $350,000,000 and $400,000,000, estimating all the gold in the country to amount to $600,000,000. This funding plan, I think, is to be preferred to the mere stopping of the purchase of silver, because it would remove all cause for distrusting the currency. It would at once take away all fear of coming to a silver basis, because when the Government cancels all the paper money it ceases to be asked to make good its notes. The silver question would cease to trouble because all the silver coin would really assume its legitimate function and circulate among the people, while the merely not adding any more silver to the Treasury's possessions could only have the effect of depressing the price of silver. The Government being free from all responsibility of keeping its notes at par with gold, could wait the pleasure of the other nations, and perhaps they would find it to their interest to make a new standard for universal money. Suppose the proposition should be made to call one ounce of fine silver equal to one dollar in gold: the Government can use its silver bullion to coin and it could recoin all silver dollars to that standard.

The Government has assumed a position which is contrary to its functions. It should be administered free from all interference with

commerce, but it has interfered very much: first, by issuing legal-tender notes it has created money; secondly, by keeping a reserve fund in gold in its treasury it has interfered with the banks, and contrary to its function it is doing what it is the province of the banks to do; thirdly, by purchasing silver bullion it has become a merchant of metal, and has assumed a responsibility by creating an artificial value to silver; fourthly, by issuing its coin-notes for the purchase of silver bullion and promising to pay the same on demand in gold it has brought about this most dangerous state of affairs.

The remedy, plainly, is for the Government to borrow enough money in such sums as are needed and at such interest as it can find advantageous; to go out of the banking business and out of the money-manufacturing business. As to what should be done with the silver bullion in the Treasury after the Government has paid out all its coined silver dollars, if the demand for them continued the bullion could be coined in more dollar pieces. It would be expected that this funding would enhance the value of silver in the market very much, and it might lead to bimetallism throughout the world by the following causes: first, it would show in practice that there is a good use for silver as money by using it in fact and not by using a substitute such as is now used in the form of certificates of deposit of silver dollars—a system that makes the Treasury a storehouse for the coins and prevents their circulation among the people; secondly, it would relieve the Government of two responsibilities—the safe-keeping of the silver and the guarantee of the payment of its certificates of deposit on demand in gold; thirdly, it would withdraw all Government paper money, and in consequence there would be no other paper money left but the national-bank notes of no smaller denomination than five-dollar bills, and it would open a very strong demand for the coined silver dollars in the Treasury, when there would be a real and legitimate demand for silver; fourthly, it would show other nations that by withdrawing their paper money in small denominations there would be a universal use for silver money, and in consequence the prospects of opening the mints of all nations to a new adopted standard would be good and the policy of universal bimetallism would seem more certain. By no other proposition could the interests of the silver men be so well protected, and in no other way could commerce be better stimulated than by insuring to it the best money and plenty of it.

MOSES BRÜHL.

A PLAN AND A PLEA FOR AMERICAN OPERA.

In considering the subject of the permanent establishment of grand opera in the vernacular and of original productions by native composers, the following conditions appear primarily essential: first, the enterprise should be a public and not a private enterprise; secondly, sound business principles in the management are needed for permanent success, such as are required for other great enterprises of a public nature, and expenses should not exceed receipts, at least beyond a clearly stipulated sum; thirdly, the cooperation should be secured of artists inspired by devotion to art instead of merely mercenary motives; fourthly, to insure longer employment of those engaged, opera-chorus societies should be formed in the principal cities of the United States to cooperate; fifthly, the ballet should be dispensed with, and costumes, scenery, and other accessories should be purchased at reasonable prices; sixthly, a volunteer opera chorus should be formed to augment the professional force.

A lesson may be learned from the fate of the so-called National Opera Company. A public-spirited woman, whose sincerity no one questions, conceived a lofty purpose. Supported by lavish contributions from wealthy and public-spirited citizens of New York, the enterprise after a short life completely failed. The causes assigned were various, comprising, among others, insincerity of artistic purpose, for the "national" character of the enterprise met with ridicule, especially in the West, where it was looked upon by many as a foreign craft sailing under false colors. Even its purpose as a public enterprise has been called into question, for the American composers point, with apparent justification, to the fact that not a single original work was produced, nor, as far as can be ascertained, even examined to discover its merits and feasibility. While these and many other reasons have been brought forward as explanations of the failure, there is now no doubt that the main, if not the only, cause of its sudden collapse was extravagant management. One of the directors, who had occasion to examine the receipts after the collapse, told me that he was astounded at the largeness of the income, and that nothing but the most extrava-

gant management (for which he, of course, could not blame the lady at the head of it) could have bankrupted the undertaking. It is but fair to add, it seems to me, that the appendage of ballet was an unnecessary incubus, and that while the "star" system was not ostensibly countenanced, the salary list presented a spectacle of exorbitant prices.

The failure of this enterprise has been so disastrous as virtually to have retarded the progress of grand opera for an entire generation in this country; for however sincere and practical an undertaking may be, however different the motive, however reasonable the details, and however patriotic the design, at every turn the ghost of the original National Opera Company is conjured up, and (though the poor thing, strange to say, speaks mostly French, Italian, and German) one is told to consider that more than a million dollars were lost—they forbear to say squandered—in that undertaking. That it was foreign wine served with an American label upon it they appear to forget, and so they now refuse even to taste the genuine native vintage when it is offered them. I do not question the honesty of purpose of Mr. Theodore Thomas, who achieved some artistic triumphs of which any director might well be proud; and the suspicion is aroused that could he have gone on, the ultimate production of original works by American composers would have been seriously considered. But the disastrous result is a matter of history, and it was evidently not owing to the production of American opera, for no American opera was produced. It would, therefore, seem most unjust perennially to shake the skeleton of this enterprise in the face of every sincere effort in behalf of American grand opera that may be undertaken in the future.

It would appear that to challenge successfully the patriotic support of our people, the undertaking should be made as a public enterprise for the advancement of art and for the encouragement of native talent, and not for the sole profit of an *impresario* or any other individual. This could be accomplished by a corporation under the laws, not for profit, or with a possible dividend limited to three or four per cent, all receipts in excess of expenses to be placed in a trust fund in the hands of trustees for the training of talented singers or composers. The organization might be conducted on the following lines:

As the chorus and orchestra are the basis of grand opera, they should be so organized as to secure the best possible results at the least expense. There should be formed an opera-chorus society of ladies and gentlemen not dependent upon singing for a livelihood. This chorus should number from one to three hundred and should

serve as an auxiliary to the professional or acting salaried chorus, which would not, therefore, need be so large. For instance, the acting chorus would not exceed thirty-five or forty singers, for the auxiliary (volunteer) chorus would sustain the *ensemble* where power and sonorous quality were necessary. The orchestra, too, could be greatly economized to general advantage: a body of forty-five or fifty being sufficient for the work of accompanying, this could be augmented in the strings by students. In this manner a body of sixty effective players could be secured, with from thirty-six to forty-five salaried performers. In Europe almost every city of any pretension has its local opera with chorus and band, supported by the customary patronage of some petty prince, and most of those in the chorus and the orchestra have other occupations that thus render it unnecessary for them to receive from music their entire livelihood. This is one of the chief causes of the prevalence of grand opera at reasonable prices.

The chorus and orchestra having thus been placed upon a logical business basis, the next important matter would be the solo artists. Here a radical change should be made at the start. The "star system" should not be tolerated. When one considers that with both Italian and German companies artists have been paid in the United States as much in a single month as they received in their native land in a whole year, another of the chief reasons for the failure of our opera seasons must be apparent. It is asserted even that some singers possessing life contracts with royal opera companies abroad, which include a life pension after a certain term of service, have surrendered these for a single season's engagement in this country.

It being plain, therefore, that purely mercenary motives cannot find a place in a scheme of the character proposed, it becomes at once apparent that native singers, as far as possible, should be engaged. It is most likely that nearly all female *rôles* and many male parts could be thus taken by our own people, and where this might not be found possible the parts could be taken by foreign-born residents to whom the learning of the vernacular would be no hardship. All persons engaged should consider the honor of their position of some importance. They should be expected to participate somewhat from patriotic and not wholly from pecuniary motives. Such cooperation could be expected only when the profits were for the public good and not for the enrichment of a private enterprise; for in any personal undertaking the greed of the manager excites a like feeling among all with whom he deals, heaping up expenses beyond all reasonable limits.

The cooperation of solo-singers, of leaders in the orchestra and the chorus could be secured upon a much more reasonable basis if engagements, say for six months, could be guaranteed. This could be made practicable by the formation of local opera-chorus societies in our larger cities. These local societies would need to learn only certain distinctly choral or *ensemble* numbers at first, the acting (salaried) chorus doing all the dramatic work. The participation of such bodies would awaken a local interest in every city and arouse a musical feeling which would contribute largely to an artistic and financial success. Thus a permanent result would be achieved in every city, and a chorus and a sufficient orchestra would be organized with a society to sustain it as patrons of American grand opera. The standard of the *ensemble* would thus be greatly improved, the chorus parts would be given with fresh voices, and the expenses would be diminished and the receipts increased.

The ballet in modern opera is a superfluous appendage, and in veiw of the gorgeous spectacular productions given elsewhere, its introduction serves only to excite ridicule. Another item of enormous expense has been costumes, scenery, and paraphernalia. These have invariably been purchased at absurd prices, sometimes three and four times their value being paid. I remember hearing Sir Augustus Harris upon his Drury Lane stage at a rehearsal tell a carpenter that he would give him just one-half what he demanded for a certain quantity of work, and when Sir Augustus caught my look of surprise he said to me, "They'll make money on it at that." These details of expense attended to with the economy that is practised in private business would go far to diminish expenses and to render certain a financial success.

Since all permanent results are achieved by gradual development, it would be wise to make the first attempt in a modest manner and not to endeavor to clothe it with all the pomp and circumstance of an entire season of grand opera. Thus, as an initial effort, I would suggest three works, two of which should be original operas by native composers, the third a standard favorite. These might be given first to the patrons and then be repeated for the public at popular prices within the reach of all. Thus the patrons' nights would serve to show the support given by public-spirited citizens, and the popular nights would show whether the enterprise received the approval of the masses.

As a suggestion of a definite plan of incorporation, the following is offered: The organization of a stock company with a capital of one

hundred thousand dollars in shares of one hundred dollars each, twenty-five per cent to be paid at organization, the balance in amounts not to exceed twenty-five per cent at any one time, the entire sum to be paid within a year. Let it be expressly stipulated that dividends in excess of four or five per cent shall not be paid, all money in excess of expenses and the dividends to be placed in the hands of trustees for the education of talented singers and for the production of new works.

There should be no hesitation on the part of the public regarding the availability of original works by American composers. Mr. Theodore Thomas has already recognized the merit of many works. Mr. Anton Seidl has placed himself on record in his interesting article in the FORUM for last May in the following emphatic language: "We have plenty of good material for the making of musicians, but this material is buried beneath the army of foreign artists who come annually to our shores, and whom Americans have formed the habit of encouraging—often simply because they are foreigners." Add to this the recognition of the native composer extended by the veteran Boston director, Mr. Carl Zerrahn, and with an already known list of fifty grand operas by Americans to choose from, there can be no doubt whatever that an honest and persistent effort would produce results which would be an honor to our country. It would seem peculiarly appropriate to inaugurate such a movement during this Columbian year, when the civilized world will come here and will carry away judgments of our institutions to every corner of the globe. Shall our visitors be permitted to return to Vienna, Rome, Berlin, St. Petersburg, and Paris and report that Americans have no talent in music? Shall this libel upon our earnest and struggling composers whose sacrifices have proven a devotion to their art such as should consecrate them in the hearts of every true American, be permitted to go abroad —this, too, for the lack of a paltry sum of money? Self-respect is as essential to a composer of music as to a man of any other profession. As long, therefore, as music is considered as a mendicant and treated as such by our wealthy people, we shall have no great composers. It remains to be seen if, among the multi-millionaires and music-lovers of the United States, native talent is at length to be given an equal chance with composers of other countries. I feel certain that I voice the sentiment of all sincere American composers when I request but an equal chance with foreigners. Common justice demands no less, self-respect should ask no more.

SILAS G. PRATT.

SHORT STUDIES OF GREAT MEN: PASTEUR.

I WISH briefly to review the life and accomplishments of a man to whose lot it has fallen in a larger measure, perhaps, than to that of any other man, to open important pathways of research in medicine and to establish a doctrine of causation of disease upon which a mighty and efficient structure of prevention and cure has already been erected. Upon principles discovered and established by him rests the modern treatment of surgical wounds with the saving already effected of hundreds of thousands of lives, and to him, in 1876, Professor Tyndall wrote these words:

> "For the first time in the history of science we have the right to cherish the sure and certain hope that, in respect to epidemic diseases, medicine will soon be delivered from empiricism and placed on a really scientific basis. When that great day shall come, humanity, in my opinion, will recognize that it is to you that the greatest part of its gratitude is due."

Born in December, 1822, in a village near the central-eastern frontier of France, of humble parents who labored and sacrificed to advance his education as though they foresaw his future, we find Louis Pasteur, at the age of eighteen, already a tutor in the College of Besançon, which had just given him his baccalaureate degree, with a reputation established for exceptional ability and industry and with a maturity of character far beyond his years. His position was modest: it lodged and fed him and gave him five dollars a month; but it gave him also an opportunity to continue his studies and it placed his foot upon the first round of that wonderful ladder of educational and scientific organization which offers to every young lad in France who chooses to attempt it a sure promise of rewards and honors in accordance with his ability and industry. Three years later he won a place in the *École Normale* at Paris, where almost all his work has since been done and of which he has become the supreme glory. In this great school, where the students are invited rather to independent investigation than to attendance upon methodical instruction, Pasteur found both stimulus and opportunity for the gratification of his passion for chemistry.

For it was a passion. He was heard to murmur one night as he went to bed, "Ah! seven hours yet to wait before I can go back to the laboratory!" Such zeal, directing such powers as he had already exhibited, could not fail to produce striking results, and it is hardly a surprise to see him, three or four years later, solving, in a communication to the *Académie des Sciences*, a problem in chemistry and crystallography that had balked the scientific world. Mitscherlich had pointed out an apparent fact which overthrew a current theory from which much had been hoped. Pasteur showed that the alleged fact was an error of observation. Certain crystals of tartaric and paratartaric acid and their salts, thought to be identical, did not affect polarized light in the manner in which, according to the theory, they should have affected it. Pasteur discovered, what all others had overlooked, that the crystals differed from one another as the right hand differs from the left, and that if the different kinds were kept separate the effect of their solutions upon polarized light was in accord with the theory.

We can perhaps gain some conception of the sharpness of the scrutiny that enabled Pasteur to recognize these differences from a remark made to him by Mitscherlich. "I studied," said the latter, "those two salts, in their minutest details, with so much care and assiduity that if you discovered anything that I had failed to find, it could only have been by the guidance of a preconceived idea."

The path thus opened was followed by Pasteur with results that were most suggestive of unsuspected underlying principles; he found molecular asymmetry to be the characteristic, the stamp of life, the invariable, though sometimes hidden, feature of all substances that have the most influence in the manifestations of vegetable and animal life. It is the line of demarcation between living and dead chemistry.

One of the observations made at this time led to the next and most important step in his career. He caused a solution of the paratartrate of ammonia to ferment, and he noticed that as the process advanced the solution, which at first was without action upon polarized light, gradually deviated the plane to the left. Of the two forms of acid, the right and left, of which the salt was composed, only the former was broken up in the process; the latter, the left, remained unchanged.

The explanation was to be sought in the nature of the process of fermentation. He had proved molecular asymmetry to be peculiar to life, to living chemistry; he found it present and active in fermentation. He sought the life from which it came, and he made the great discovery of the agency of living ferments. At one stroke he swept

away all the old theories, and in the place of those explanations which did not explain, those theories each of which was limited to some restricted group of fermentations, those solutions which depended upon unproved and unprovable assumptions, and each of which raised a new problem to be solved, he gave us a simple theory which rested at every point upon demonstrated facts, and which not only was applicable to all recognized fermentations, but also vastly enlarged the boundaries of that class, bringing within it other processes whose kinship had not been appreciated and adding a multitude of others whose existence had not even been suspected: the theory, namely, that the process is one that is correlative with life, not, as formerly supposed, with death, and that all these varied manifestations have a common cause—the active growth and multiplication of minute organisms.

The origin of these minute organized ferments was so entirely unknown, their appearance in the fermenting liquids was so mysterious, that Pasteur felt it to be necessary to investigate the theory of spontaneous generation, which was invoked by many to account for their appearance. He was strongly dissuaded from the undertaking by his best and closest scientific friends on the ground that the problem was practically insoluble; but he persisted. Never had he worked with more thoroughness, greater watchfulness, keener intelligence, and sharper insight than in the remarkable experiments which completely overthrew and laid bare the errors and defects in the experiments of those who maintained it. The story, which is far too long to be told here, is one of the most interesting and instructive in the history of scientific research; it has been told and retold many times, and by no one more clearly and attractively than by Professor Tyndall, who has himself done so much to extend and illustrate it.

Returning from this scientific excursion to continue his work on fermentation, Pasteur took what may be called his first step in the investigation of disease, although the disease was merely one of certain vegetable products, not of man or even of beast. He studied what was called the disease of wines, that sudden change which occurs sometimes after the wine has been kept for years and which within a few weeks wholly destroys its value. It is sufficient here to say that he found the change to be a fermentation, with living organized ferments, and that he devised efficient preventive measures which are now in general use, and the savings effected by which are already estimated in millions.

In like manner, a few years later, he relieved the manufacture of vinegar and of beer from empiricism and faulty methods and gave them the security of a scientific basis, and at the end of that work he uttered, with the caution so characteristic of all his statements made before the complete demonstration, this suggestive sentence: "The causation of contagious diseases is perhaps on the eve of receiving an unexpected light."

His success in detecting and removing the cause of the deterioration of wine was promptly followed by another equally important economic discovery, one which affects even more forcibly the imagination of the multitude and the emotions and resources of those who are directly interested. The cultivation of the silk-worm is an important industry in France and Italy. In 1853 France produced twenty-six million kilograms of cocoons, worth one hundred and thirty million francs. During the following decade the production was so reduced by a disease of the worms that in 1865 it amounted to only one-sixth of what it had been in 1853, a money loss of more than a hundred million francs annually. The industry was threatened with total destruction. Innumerable researches into the cause of the disease had been made, remedies of the most varied kinds had been tried, and the French government had even agreed to pay to the inventor of an alleged cure five hundred thousand francs if it should prove efficient. But nothing availed, and each year the crop was smaller. The senate appointed a committee to consider the matter, and that committee at once turned to Pasteur and asked him to investigate the disease. To his objection that he knew nothing about it, that he had never even seen a silk-worm, they replied: "So much the better; you will approach the subject without prejudice." The sacrifice that was asked of him was great, for it required the prolonged abandonment of those researches in fermentation which were so plainly leading him to a great future; but he saw his duty and he followed it. He went at once to one of the desolated districts, and was so impressed by the sight of the distress occasioned by the epidemic that he resolved not to return to Paris till he had exhausted every line of investigation. The industry is one that is carried on by a multitude of small proprietors, not by large corporations. Every family in the village hatches out as many worms as it can care for, filling every room in the house with them, and they watch them through their four moultings and into their cocoons with the greatest solicitude. Day and night they are afoot, to give them food and protect them against changes in the

weather. It is said that during the seasons the salutation of the villagers when they meet is not "How are you?" but "How are they?" In the close struggle for life in those older communities the gain or the loss of the little revenue from a few silk-worms meant in many a family comparative ease or dangerous want; the general loss of a crop was a public calamity.

Into the details of this investigation we cannot now enter. It was pursued for five years with unflagging devotion and in the face of much criticism and even active hostility. He found the cause of the disease to be the infection of the worms by minute corpuscles, and that even an apparently healthy moth might bear the infection within itself, and that, if it were thus infected, the eggs it laid would produce only diseased, useless worms. He showed that safety was to be had only by killing the moths after the eggs had been laid, examining their bodies for the corpuscles, and then hatching only those eggs that came from uninfected moths. At last his success was universally admitted, and to this day, wherever in Europe the silk-worm is cultivated, there will be seen at the proper season work-rooms filled with women and girls busily engaged with their microscopes in searching for and throwing out the tainted egg which he taught them to recognize.

Pasteur emerged from this trial again a conqueror, but also, alas! a cripple. In the midst of it, in October, 1888, he was stricken with paralysis. He slowly regained the use of his limbs, but he bears to this day its traces on his face and in his gait.

Such was his life up to the age of fifty years. It is one long, unbroken record of successful effort, of brilliant discoveries in science, of vast additions to the economic resources of the world, and of hearty recognition and appreciation. Had it ended then he would still have ranked among the notables of science. It appeared, indeed, to be near its end. Crippled in body by paralysis, utterly depressed in mind by the terrible calamities that overwhelmed his country, he no longer had the heart or the strength to work. And yet the future was to show that the past, brilliant as it had been, was only a preparation and a training for a still more brilliant series of triumphs in a field of the highest interest, and one, too, from which he would suppose himself to be naturally excluded so far as personal effort was concerned, although he recognized its possible connection with the work he had already done. To the objective knowledge of the changes effected by disease, gained by the labors of the great French school

of the beginning of this century, was now to be added, by the same method of observation and experiment, a knowledge of the cause of disease, with all the vast possibilities of prevention and cure which flow from such knowledge.

Pasteur's brilliant researches in fermentation and spontaneous generation had gone far beyond the simple demonstration of the presence and agency of germs. He had not merely found the germs; he had isolated them, had devised methods to obtain pure cultures, and had studied their natural history in detail. In short, he had laid the foundation of the modern system of bacteriology. The work was already bearing fruit in the field of medicine. The study of the dust of the air and the proof of its agency in exciting putrefaction had led Lister to the antiseptic treatment of wounds, the importance of which was just beginning to win recognition. The interest in the subject was especially quickened in 1872 by some striking experiments made in Paris, which showed that *septicæmia* (blood-poisoning) could be produced in animals by the injection of infinitesimal quantities of the blood of other animals that had died of the disease, and every laboratory was occupied with the subject. Between the years 1870 and 1873 more than two hundred papers were published upon it. Pasteur naturally followed this movement with the keenest interest. More than ten years previously he had foreseen the possibility and expressed the wish that he might be able to carry his researches sufficiently far to prepare the way for a radical investigation into the origin of disease. But he had no thought of taking a personal part in it, for although the University of Bonn had conferred upon him the degree of Doctor of Medicine and the Paris Academy of Medicine had made him an honorary member, he was, as he said, not a physician. After a year or two, however, the interest became too deep or the pressure too great, and he entered the new field. Faithful to his own method of experimentation, as contrasted with that of observation, he turned first to certain infectious diseases of animals, for in them observation and inference could be controlled and verified by experiment as it could not be in man.

It had been known since 1850 that the blood of cattle infected with splenic fever, or *charbon*, contained vast numbers of rod-shaped micro-organisms to which the name *bacteridia* had been given. The disease had long been prevalent in Europe, and in France alone annually destroyed horses, cattle, and sheep valued at from fifteen million to twenty million francs. It is communicable to man, the so-

called "malignant pustule" or *anthrax*. Davaine and Rayer had noted in 1850 the presence of the *bacteridia* in the blood, but had drawn no inference from it. Thirteen years later Davaine was reminded of them by reading Pasteur's description of the microbe of butyric fermentation, and suggested, in a communication to the *Académie des Sciences*, that they were the cause of the disease. The matter had been rather tepidly discussed from time to time for several years, experiments had yielded conflicting results, and the claim of a causal relation between the *bacillus* and the disease was far from being established. In 1876 Pasteur began his investigation, and in the following year he was able not only to demonstrate the agency of the *bacillus* in producing disease, but also to explain the contradictory results obtained by previous experimenters. He showed that the bacillus, to employ his own term, was aërobic: it needed free oxygen to live; and consequently the death of the animal, by cutting off the supply of free oxygen, led to the death of most of the *bacilli* within it in a few hours. According, therefore, to the length of time that had lapsed between the death of the animal and the taking of its blood for inoculation would the experiment succeed or fail. He showed that the deaths that followed the late inoculations were due to an anaërobic microbe, one that did not need free oxygen, and thus was explained the absence of the *anthrax bacillus* from the bodies of these victims; these deaths were due to *septicæmia*, not to *charbon*. The investigation gave to science, not only the full story of the *bacillus* of *charbon*, but also that of a microbe of *septicæmia*, and the life-history of each was traced with a completeness that made it possible to explain all contradictions and obscurities. He made pure cultures; he traced the *bacillus* through all its stages, recognized those in which it was vulnerable and those in which it could successfully resist the action of powerful antiseptics, and, in a word, discovered much that has again and again been rediscovered and is often credited to others. He even followed the *bacillus* of *charbon* into the grave of its victim, and thence through the bodies of earth-worms back to the surface of the soil and even upon the blades of grass that grew over it.

Coincidently with the study of *charbon* he carried on that of chicken-cholera, and he allowed himself to step aside for a moment from these two diseases which can be studied as thoroughly upon animals to discover the microbe of furuncles, of suppuration, and of osteomyelitis in man. With the latter he did nothing beyond the identification and the cultivation; his methods of further study were

unavailable; but the study of *charbon* and chicken-cholera was pursued until he had discovered and established a great principle whose possibilities for good elude even the grasp of the imagination. This great principle is the attenuation of virus, the reduction of the virulence of the microbe to a point at which inoculation with it will not kill and yet will confer immunity against a subsequent attack. This discovery, the crowning work of his life, was made, like all his others, not by chance, but by prolonged search with this definite object in view. He had long meditated on the immunity against small-pox conferred by vaccination and on immunity against recurrence conferred by a number of infectious diseases, and had sought to discover how far the latter was true of the diseases he was studying. The first results were obtained with the microbe of chicken-cholera. If this microbe is cultivated in sterilized broth and successive cultures are made at short intervals the virulence remains unchanged; a drop of the twentieth culture will kill as surely as the first. But if the interval is lengthened, if the second culture is made after the first has stood for a few weeks or months, its virulence is less; and if this second culture is kept for a second similar length of time, the third, made from it, will be still less virulent. Inoculation with the first kills all the fowls that are inoculated; inoculation with the second kills only a part of them; inoculation with the third kills still fewer, and finally a culture is obtained from inoculation with which all the fowls recover after having been ill a day or two. These survivors are then able to bear inoculation with the strongest culture; they have acquired immunity. Moreover, the microbes of diminished virulence thus obtained, the "domesticated" microbes, as they have been called, can be indefinitely cultivated and continued; it is not necessary to begin again with those of full virulence and repeat their attenuation. In short, a new disease, or a new form of disease, had been created, one that bore to chicken-cholera the same protective relation that cow-pox does to small-pox, and there was no danger that this protective disease would ever disappear and be lost; so long as chicken-cholera existed its "vaccine" could be re-created, if necessary, by appropriate cultivation.

Jenner's vaccination against small-pox was the shrewd application of a chance observation of a certain relation between two existing diseases; Pasteur's discovery of the means of attenuating a virus and conferring immunity thereby was effected by long-continued intelligent experimentation, guided by wide observation and profound

thought. The former was the brilliant utilization of a fact that had already been observed by others; the latter was the original discovery of a principle. If cow-pox were to die out vaccination would be at an end; but in the attenuation of a virus the disease is made to protect against itself. The bane bears its own antidote.

Pasteur sought at once to extend his study to other microbic diseases that conferred immunity when the attack was survived. He found by experiment that *charbon* was such a one; but unfortunately the mode of development of its microbe is different from that of the microbe of chicken-cholera; the latter multiplies wholly by scission, the former develops partly by spores, which withstand exposure to the air and retain virulence notwithstanding prolonged delay in cultivation. He was forced first to find a mode of development in which the spores would not be formed. The personal side of the story of the search has been touchingly told by one of his children. Days and weeks were passed in experimentation. Pasteur became more and more absorbed and preoccupied; he went about with what his daughter called "his expression of impending discovery." To the timid questions of those who were waiting and watching with so keen interest, his only reply was that he could not answer, that he dared not formulate his hopes. At last, he returned one day from his laboratory in triumph, and tears of joy rose to his eyes as he told the story of his success. The difficulty had been overcome by cultivating the germs in broth at a temperature of about 108° Fahrenheit: this gave a steadily diminishing virulence, any grade of which could subsequently be maintained by suitable cultivation; and among the grades were some that were too weak to kill, but yet were strong enough to protect. The announcement of the discovery was promptly followed by a challenge to a public test. Fifty sheep and ten cows were provided; half of them were inoculated with the protective virus, and three weeks later all, the vaccinated and the unvaccinated, received each an injection of full strength. It was done in the presence of a great crowd of farmers, veterinaries, physicians, journalists, and legislators, and two days later they reassembled to see the result. That result was a complete confirmation of the prediction. Of the twenty-five sheep that had not been protected by inoculation twenty-two were dead and three were dying; the unprotected cows were living, but very ill; all the protected animals, sheep and cows, were in perfect health.

It will be readily believed that while he was thus so earnestly and

successfully studying diseases of the lower animals Pasteur was not unmindful of those affecting man. As has been already mentioned, he had isolated and cultivated the microbes of suppuration, of furuncles, and of osteomyelitis; and in addition he had studied those found in the blood of patients affected with typhoid or puerperal fever. In the latter he had recognized several distinct varieties—one of them the *micrococcus* of suppuration—and in a communication to the *Académie des Sciences* he had advised the employment of antiseptics in midwifery. He had already made the suggestion at the *Maternité*, where it was followed by the happiest results. But he felt himself disqualified from pursuing these lines of research by his lack of training in medicine and the impossibility of employing in them the instrument which he had learned to handle with marvellous skill—experimentation. The only diseases of man that he could thoroughly investigate were those that also affected the lower animals. One of these had attracted his attention while he was engaged upon those that have already been mentioned, and when that work was finished he gave himself up wholly to it, and during the last few years it has become the one subject with which his name is chiefly associated in the minds of all save those who are professionally familiar with his other work. There is much in this fact, too, that is saddening, for in connection with it he has suffered much, like other benefactors of the world, from those who, honestly perhaps, but none the less cruelly, ignorantly, and blindly, have grossly misstated his results and misrepresented both him and his methods.

This disease is hydrophobia. His study of it was seriously hampered by technical difficulties, but he succeeded in obtaining an attenuated virus which not only protected against subsequent infection, but also acted so much more rapidly than the common virus of the saliva that it would prevent the development of the disease by the bite of a rabid animal even if the protective inoculation was not made until several days thereafter.

But to extend this protection from animals to man was a step which he long hesitated to take. It was at last in a measure forced upon him. On the morning of the 4th of July, 1885, a little boy on his way to school in a village in Alsace was attacked and severely bitten by a rabid dog. A physician cauterized the wounds with carbolic acid and advised the parents to take the child to Paris, where, as he said, was the only man who could do anything for him: he lived in the *Rue d'Ulm* and his name was Pasteur. The advice was followed,

and on the morning of the 6th of July the mother and child presented themselves at the laboratory. Pasteur, deeply moved by the distress of the parent and strong in the confidence his experiments had created, asked the advice of two professors in the School of Medicine who were familiar with his investigations. Both approved of the attempt, and the lad received his first injection the same day. On each succeeding day another and more virulent inoculation was made; and as the danger, if danger there were, was thus daily increasing, so increased likewise the anxiety of Pasteur. His days were agitated, his nights sleepless, and even long after the treatment had ended and the child had returned to his home, Pasteur wrote to him every week for news of his well-being.

Thus began the application of the remedy to man. The announcement of its success to the *Académie des Sciences* created a profound sensation, and when a second patient came to Paris for treatment, a brave young shepherd who had been bitten while defending some children from a rabid dog, the public press was filled with accounts of it, and for the time it was the topic of chief interest in the city. This interest promptly brought an important practical result. The number of patients applying for treatment became far too great for the limited accommodations of the *École Normale*, and a public subscription was opened, under the auspices of the *Académie des Sciences*, for the erection of a special building for the treatment of the bitten and for bacteriological study of infectious diseases. Subscriptions to this fund poured in from all quarters; one of the largest gifts came from the Czar, in recognition of the saving of the lives of sixteen Russians who had been bitten by a rabid wolf; another came from the Emperor of Brazil, in recognition of the high scientific value of the work; another from Alsace-Lorraine, from which had come Pasteur's first patient, and a multitude of others from corporations and individuals throughout France. As has been said by a biographer, this time the prophet was not without honor in his own country—far from it. In May, 1886, a festival in aid of the *Institut Pasteur* was given at the *Trocadéro*, at which the greatest celebrities of the literary, musical, and theatrical world of Paris assisted, and when Coquelin recited a poem in honor of the master the audience rose and joined in the greatest ovation that had ever been offered to a man of science.

The *Institut Pasteur* was thus established, and during the years 1886–91 there were treated within it 11,029 individuals who had been bitten by rabid animals; of these, 98 have died. I quote from a report of the

Board of Health of the city of Paris.[1] Comparing this mortality of less than one per cent (0.88 per cent) with the mortality among those not treated, as ascertained by the authorities of the city of Paris for the years 1887 (15.9 per cent) and 1888 (13.33 per cent), or with that given by medical writers (15 per cent), it appears that the work of this charity has already resulted in the saving of about fifteen hundred men, women, and children from death in one of its most terrible forms. In reply to a question addressed him a little while ago, Monsieur Pasteur writes me that during the year 1891 two hundred and one persons living in Paris were treated at the *Institut*, with no deaths, and that during the same period in the same city four persons died of hydrophobia from among the very limited number of those who had been bitten and had not been treated by inoculation. In addition to these two hundred and one Parisians more than thirteen hundred other patients, coming from greater or less distances, were treated at the *Institut Pasteur* during the year, and similar institutions have been at work in seventeen other cities. It would be interesting and profitable to study in detail the means and methods by which these vast results have been obtained, but space forbids more than a brief reference to them.

Of his method, the experimental method, which he used with such transcendent skill, the method handed down to us by the great experimenters of the past—Galileo, Pascal, Newton—he has given us a description and an appreciation:

> "Admirable and sovereign method, which is always guided and controlled by observation and experience freed from every metaphysical conclusion; a method so fruitful that great minds, dazzled by its conquests, have believed that it could solve all problems. One can do nothing without preconceived ideas; but we must have the wisdom to believe in their deductions only so far as experience confirms them. Preconceived ideas, under the rigid control of experimentation, are the vivifying flame of the sciences of observation; their danger is in fixed ideas. Do you remember Bossuet's fine saying, 'The greatest disordering of the mind is to believe that things are because one wishes them to be'? To enter on a path and to stop every moment and make sure you are not going astray—that is the true method."

In these impatient times such a method seems all too slow; but see how far and how safely it has taken him. Doubtless his mistakes, his false routes, might be counted by thousands; but he himself detected and corrected them, and no step definitely taken has ever had

[1] "*Rapport sur les cas de rage humaine constatés dans le Département de la Seine de* 1890 *à* 1891. *Conseil d'hygiène publique et de salubrité.* 1892."

to be retracted. No statement that he has ever made has proved to be incorrect. His caution in approaching a conclusion is equalled only by his assurance after it has been reached. Each is absolute. His comments on puerperal fever were made almost with an apology:

"I tell you these things as they appear to me. But I do not forget that I am ignorant of medical science, and I earnestly ask for your judgment and your criticism."

How different his tone when he felt himself master of the subject:

"What?" he cried with magnificent scorn one day in the *Académie de Médecine*. "What? Do you say that I may have worked twenty years on a subject and yet should hold no opinion on it; that the right to verify, to control, to discuss, to interrogate, shall belong only to him who does nothing to throw light upon it, to him who, with his feet on the fender in his library, has only read with more or less attention the results of my labor? You say that in the present state of science it is the part of wisdom to hold no opinion [on spontaneous generation]. Well, as for me, I hold one, for I have earned the right to hold it by twenty years of assiduous labor; and it would be well for every impartial mind to share it."

To those who were not aware of the thought and labor upon which it rested, such absolute confidence might seem foolhardy and arrogant; but those who tested it soon learned to respect it, and those who had once met him in debate shrank from again falling into his redoubtable hands. "Come with me," said a man once, "come with me to the Academy and see me strangle Pasteur." "Take care," was the reply; "take care, my friend. Pasteur is a man who makes no mistakes."

Absolutely open and sincere, solicitous only that the truth should be known, he never hesitated to make public his reasons and his processes, to submit them to any open test, and to stand or fall by the result. Few men have had so many scientific controversies, and no one, perhaps, has come out of them so uniformly successful and with his success so uniformly conceded. The latter fact is due in part to the resolution with which he has held himself and his opponents down to statements capable of proof or disproof. Sooner or later the debate would reach a point at which he could force an issue on some one decisive fact and have that fact determined by a committee of the society in which the discussion took place.

Heated as these discussions often were, ardent as was his support of his views, and pitiless as was his exposure of error, it is a pleasure to note that on his side the personal element, in the unworthy sense, was always absent. His interest is in the truth, not in himself.

The work that I have thus followed has been done in almost exactly half a century, the period between the ages of twenty and seventy years. And how magnificent it is when it is summed up! In science he has laid at rest the theory of spontaneous generation which for centuries had blinded and misled, and in its place he has given us a new world, that of the infinitely small; he has made clear the nature of fermentation, and by that explanation he has brought into one group of exquisite simplicity what had previously been a chaotic mass of unrelated processes and changes. In medicine he has given us the science of bacteriology; he laid the foundations of antiseptic surgery, by which hundreds of thousands of lives and countless limbs have been saved; he demonstrated the microbic nature of certain diseases, and he gave us the principle of protection by an attenuated virus with its vast possibilities for good, and he has himself applied that principle in one disease to save from a terrible death hundreds of our fellow-creatures. I hesitate to close such a record with a reference to material gains, and yet, in the words of Professor Huxley, Pasteur's discoveries would be sufficient in themselves to make good the war indemnity of five thousand million francs paid by France to Germany.

In the address which he made ten years ago on his reception into the French Academy, after an eloquent declaration of his faith in God, his belief in immortality, and his conviction of the reality of those lofty preoccupations which are put aside as non-existent by the Positivists, Pasteur said:

> "The Greeks understood the mysterious power of those hidden things. They gave us one of the most beautiful words in our language—enthusiasm—ἐν θεος, a god within. The grandeur of human actions is measured by the inspiration which gives rise to them. Happy is he who bears within himself a god, an ideal of beauty, and who obeys it. The ideal of art, the ideal of science, the ideal of patriotism, the ideal of the virtues of the gospel—these are the living springs of great thoughts and great deeds."

Pasteur's whole life has shown that he possesses such an ideal and that it directs every act. May the happiness that he predicated of such a possession, the happiness that he has so abundantly earned by his devotion to the truth and by the benefits he has conferred, be his reward.

LEWIS A. STIMSON.

THE TRANSFORMATION OF NEW ENGLAND: IS IT DECAY OR DEVELOPMENT?

NEW ENGLAND is being transformed in population, politics, industry, education, and religion. Ninety-eight per cent of the original population were of English extraction and remained so down to the beginning of the present century. Political life was intense, local, and almost socialistic in its minute regulation of private affairs by public authority. If a woman was a scold, if a man was a loafer, they were fined. If a dealer was convicted of "selling strong water at divers times to such as were drunk with it, he knowing thereof," his strong water was delivered into the hands of the deacons for the benefit of the poor, and the man who "abused himself shamefully with drink" was compelled to stand in a public place with a sheet of paper on his back whereon the word "drunkard" was written in great letters. With this searching severity in dealing with offences within their own body there was combined the most sublime courage in opposing interference and encroachment from without. Even in its infancy, the Colony of Massachusetts Bay had the audacity to answer the demand of Charles I. for its charter by making bullets a legal tender of the value of a farthing apiece, that there might be plenty in case of need.

Agriculture was the almost universal industry. From this as a basis were developed gradually commerce and the arts. As Col. T. W. Higginson has said:

> "It is not yet fifty years since the people in our country villages lived by farming, the men making their own sleds, shingles, axe-handles, scythes, brooms, ox-bows, bread-troughs, and mortars, the women carding, spinning, braiding, binding, and dyeing. They sat around great fire-places with hanging cranes, fire-dogs, and spits turned by hand or by clock-work; they made their own tallow candles, and used, even on festal occasions, wooden blocks or raw potatoes for candlesticks; they ate from pewter kept bright by the wild scouring-rush (*equisetum*); they doctored their own diseases by fifty different wild herbs, all gathered near home and all put up in bags for the winter or hung in dried bunches; they spun by hour-glasses; they used dials or had noon-marks at different points on the farm; in many cases they did not sit down to regular meals, but each took a bowl of milk and helped himself from a kettle of mashed potatoes or Indian pudding; soap was made at home, so were cheese, pearl-ash, birch, vinegar, cider, beer, baskets, straw hats; each farm was a factory of odds and ends, a village store in itself, a laboratory of applied mechanics."

Education was plain and practical. The village school gave the rudiments of education to all, and the academy and college fitted for professional life the chosen few. Everything centred in religion. The meeting-house was the centre of the town; the Bible was the statute-book of the community; the minister was the censor of society; membership in the Church was the condition of suffrage in the State. In visible form for half a century, in its invisible spirit for a century and a half more, the biblical commonwealth endured. Within the last half-century the change has come.

To-day one-quarter of the population is of foreign birth; another quarter of foreign parentage; only one-half (fifty-two per cent, by the last census) are natives of native parentage. The proportion varies in the different States. Maine still has three-quarters native of native parentage; New Hampshire and Vermont, each three-fifths; Connecticut, one-half; Massachusetts and Rhode Island, only two-fifths. One-tenth of the total population are French-Canadians, who are coming at the rate of forty thousand a year, with traditions of marvellous prolificness, stimulated by royal encouragement as long ago as the days of Louis XIV., and fostered by legislative grants to fathers of large families down to the present day; fortified against rapid assimilation by the triple armor of language, customs, and religious faith, and inspired by dreams of a New France when New England shall be no more. The intensity of local political life which found expression in the town-meeting is being smothered in the ward caucus, diffused over the State, and absorbed in the nation. Selectmen, aldermen, and representatives to the State legislatures are frequently chosen without the slightest reference to their views on town, city, or State affairs, but solely because they belong to the national party which happens to be in a majority in the locality. Poor land and rich water, emigration to and competition from the West, rapid readjustment due to tariff legislation, false pride and social ambition on the part of the natives, have combined to make manufacturing the leading industry, and then to turn it over, together with domestic service and manual labor of all kinds, to foreigners. The natives in the towns and cities as a rule are either living on interest and rent, or are tradesmen, commercial travellers, clerks, book-keepers, agents, teachers, and professional men.

Education is ornamental rather than practical. It relies on classes in physical culture and dancing for the development of physical vigor, instead of on chores and out-door sports, as formerly. It fits boys and girls to get their living in ornamental and commercial ways. It does

not impress the dignity of manual labor and the identity of the useful and the honorable. Manual training is good as far as it goes; but it is by no means an equivalent for the practice in actually doing things that needed to be done which the boy got on the old-fashioned farm.

Religion has not that grasp on the community as a whole and on the concrete relations of every-day life that it had formerly. Instead of the one powerful Puritan church, practically identical with the community which it served and ruled, we have a multitude of rival sects, each intent not so much on building up the community out of itself as on building up itself out of the community. Saving souls for Heaven rather than establishing the Kingdom of Heaven among men is too frequently the chief concern. Since the days of Jonathan Edwards, discussions about virtue have taken the place of declarations of duty. Disinterested benevolence has been cultivated more than effective beneficence. Willingness to be damned for the glory of God rather than readiness to be criticised and misunderstood in the service of men has been the test of religious character.

This turning-in upon self which followed the overthrow of the Puritan theocracy was not altogether a misfortune. This is always the resort of strong spirits when the outward world goes against them. It is what the Stoics did when the republics of the Old World went down. It has deepened New England thought and life. When the New Englander grapples with the realities of the outer world in earnest, as in the struggle for independence and in the conflict against slavery, he is irresistible. But it takes a great provocation to draw him out of his shell. At present he seems to have nothing particular on hand. Extreme subjectivity and individualism characterize the religious thought and life of New England to-day. By this I mean not merely that he does his own thinking on religious subjects, which is the very essence of Puritanism and highly desirable, but that he has come to think too much about himself, his private prospects, his chances of probation here and hereafter, and does not think enough about those objective social institutions and relations on which the salvation or spiritual well-being of society as a whole and of each individual member here and now depends.

The foreigner, on the other hand, brings with him a religion more compact in organization and more strongly intrenched in authority than that which the Puritan brought to these shores. But the Roman Catholic Church, in some of its branches, is already feeling the influence of our free thought and free institutions. It is as unfair to speak

of the American Catholic Church as a whole to-day as it is to speak of American Protestantism as a whole. There is a Romanist element in the Roman Catholic Church which is the bigoted, implacable foe of everything free, everything progressive, everything American—I might almost say everything human and divine that does not emanate from the Vatican. And there is a catholic element in the Roman Catholic Church which is as broad and tolerant and candid and truth-loving and patriotic as any that can be found among Presbyterians or Unitarians or Agnostics. I know no nobler statement of the political and intellectual attitude of the true Christian Church than that made by Bishop Spalding at the laying of the corner-stone of the Catholic University:

"The tendency of our age is opposed to bigotry, and as we lose faith in the justice and efficacy of persecution, we perceive more clearly that true religion can neither be propagated nor defended by violence and intolerance, by appeals to sectarian bitterness and national hatred. The special significance of our American Catholic history lies in the fact that our example proves that the Church can thrive where it is neither protected nor persecuted, but is simply left to itself to manage its own affairs and to do its own work. Such an experiment had never been made when we became an independent people, and its success is of world-wide import, because this is the modern tendency and the position toward the Church which all the nations will sooner or later assume, just as they all will be forced finally to accept popular rule. The great underlying principle of democracy, that men are brothers and have equal rights, and that God clothes the soul with freedom, is a truth taught by Christ, is a truth proclaimed by the Church. To be catholic is to be drawn, not only to the love of whatever is good and beautiful, but also to the love of whatever is true; and to do the best work the Catholic Church must fit herself to a constantly changing environment, to the character of every people and the wants of every age. We must recognize that though the truth of religion be unchangeable, the mind of man is not so, and that the point of view varies from people to people and from age to age. Science is the widening thought of man, working on the hypothesis of universal intelligibility toward universal intelligence, and religion is the soul escaping from the labyrinth of matter to the light and love of the Infinite; and on the heights they meet and are at peace. Let us, then, teach ourselves to see things as they are, without preoccupation or misgivings, lest what is should ever make it impossible for us to believe and hope in the better that is to be. Whatever the loss, all knowledge is gain. The evils that spring from enlightenment of mind will find their remedy in greater enlightenment. Men have ceased to care for the bliss there may be in ignorance, and those who dread knowledge, if such there still be, are as far away from the life of this century as the dead whose bones crumbled to dust a thousand years ago. Those who praise the bliss and worth of ignorance are sophists. Stupidity is more to be dreaded than malignity, for ignorance, and not malice, is the most fruitful cause of human misery. Let knowledge grow, let truth prevail. Since God is God, the universe is good, and the more we know of its laws, the plainer will the right way become."

This is a long way in advance of the ideas of the relation of church to state and of the mind of man to the truth which the early Puritans

entertained; and it would not be difficult to find Protestant bodies in New England to-day which fall far short of this high sense of the sacredness of things secular and the divineness of things human and the certain beneficence of the results of scientific research and critical inquiry. Were such Catholicism as this to supersede Puritanism in New England the transformation would not be in all respects a loss.

As to population and the power which resides in the majority, the predominance of the descendants of the French and the Irish who have arrived since 1850 over the descendants of the Pilgrims and Puritans who came previous to 1640 is a foregone conclusion. This fact should warn us against all appeals to race prejudice and religious fanaticism. Not thus can we avert the influence of those who before the year 1900 will constitute the majority of New England's population.

What will be the outcome? Will the native or the foreign predominate? We must answer in detail. The perpetuity of American political institutions is well assured. That assurance lies not in the exclusive control of native Americans, but in the intelligent and hearty participation of foreigners in the administration of local government. Official responsibility and active participation in political work is the best school of politics, and our Irish citizens are bright and eager learners in that school. This activity is not evidence of sinister ecclesiastical schemes, but simply the expression of a racial instinct long repressed. The French have less disposition and capacity for political life, but they are eminently peaceable and law-abiding.

Industrially, the foreigner will conquer. Manual labor tends to vigor and reproduction; easy ways of getting a living tend to deterioration and sterility. Hard work, steady pay, regular savings, and large families are giving to the foreigner the industrial future of New England. It is easy to get cream from milk, not so easy to get milk from cream. You can make good store-keepers and insurance agents and milliners and typewriters out of the sons and daughters of the farmer and the mechanic. You cannot make good salesmen and good farmers' wives out of the sons and daughters of mechanics and book-keepers. False industrial standards and social pride are fast robbing New England boys and girls of their industrial inheritance.

The American ideal of free secular education by the State is too deeply rooted in New England to be overthrown. The right of the

family and church to determine the religious education of their children must be frankly admitted. Protestants must recognize, respect, and perhaps emulate the genuineness of the Catholic's concern for the religious training of his children. Notwithstanding the obvious hardship of double taxation, the Catholic must recognize and accept the impracticability of any form of State aid to ecclesiastical instruction in a community of such a diversity of faiths as New England. Let the public and the parochial school struggle for existence freely and fairly, side by side. If the graduates of the parochial schools prove equally intelligent and more devout, the Protestant clergy will have to establish parochial schools for their people. If the graduates of the public schools prove to be equally virtuous and better equipped for practical life, Catholic laymen will offer their priests the alternative of public schools free or something equally valuable if they must pay for them.

The religious methods of both native and foreigner will have to be modified in order to endure. If the Romanist element in the Roman Catholic Church predominates and undertakes to make the state subservient to the temporal interests of the Church, then the Roman hierarchy will fare no better than did the Puritan theocracy. Free discussion in the state and the scientific method in the school are absolutely fatal to ecclesiastical pretensions. If the catholic element in the Roman Catholic Church predominates, and that Church proves its power to minister to the spiritual needs of plain men and women more helpfully than the aristocratic and speculative Protestant societies, it has a large career of usefulness before it and it will deserve the best wishes of all who have at heart the welfare of New England. The Protestant churches must rise above the spirit, if not the form, of sectarianism. These sects stand for the special emphasis of particular aspects of Christian faith and life; they have their justification in the circumstances which called them into being as protests against error or witnesses for neglected truths, and in their appeals to different temperaments, different degrees of mental culture and social refinement. The mischief of sectarianism lies not so much in the different aspects of truth and life for which they stand as in the lack of responsibility for the welfare of society, which, in different degrees, is common to them all. They seek first to get adherents and contributions out of the community, rather than to put influence and inspiration into it. This instinct of self-preservation, as distinct from the impulse to social service, is the inevitable result of the feebleness consequent upon the

minute subdivision of the church. It is less manifest in cities, where separate churches would be a necessity apart from sectarian divisions. In the country it is fatal to the largest usefulness. A church that is so small that it is compelled to think of itself first, to regard other churches as rivals with it for subsistence, and to depend on charity to keep itself alive, cannot be great in spirit nor powerful for good.

The modern Protestant church, like its Puritan predecessor, must assume responsibility for the well-being of the whole community in which it is placed. Competition must give way to cooperation. In country villages the weak churches must be left to starve to death by the withdrawal of missionary aid from the feeblest in every town where there are more than are needed or can be sustained. The stronger of these churches in each town must be strengthened by the absorption of the weaker, by the improvement of the quality of the ministry which this consolidation will make possible, and by the direction of effort to the concrete problems of the community in which it is placed. The church in each town must measure its success by its service, by reforms in local politics, by improvements in charity and sanitation, by support of libraries and schools, by the sweetening of family life and the refinement of social intercourse, by the respect it inspires for honest toil and the standard of righteousness it maintains; not merely by the number it draws into its fold and the contributions it sends to the denominational treasury. Yet all this must be done, not as the Puritan tried to do it, by law, under constraint through the State; but by love with freedom through society. In each town the first of the sects that rises to this conception of its duty should have the right of way. It thereby will prove its claim to be the worthy successor of the Puritans.

Whether the transformation of New England is regarded as a gain or a loss depends upon the point of view. That the average inhabitant is better housed, better clothed, better fed, better informed, is of course beyond dispute. That with the development of commerce there has been a corresponding development of the commercial virtues, all gladly recognize. Man cannot live without bread, and the more bread he has the better. Yet man cannot live by bread alone. With the material gain there has come, temporarily at least, a spiritual loss. The New Englander feeds less than formerly upon "every word that proceedeth out of the mouth of God." His spiritual needs find less complete satisfaction to-day than formerly. The early New Englander dwelt

in constant communion and intimate fellowship with God. He saw all things *sub specie æternitatis*. No doubt his apprehension of spiritual things was one-sided and narrow and his expression of them crude and intolerant. But he did see spiritual things and made others see and feel their reality. His daily duties, his household toil, his work of farm and store and shop, were all performed under the great Taskmaster's eye. Into the humblest home, into the homeliest details, there came the high sense that the infinite and eternal God was to be glorified by fidelity or dishonored by neglect; and thereby the life of the New Englander was lifted out of the pettiness of his material and temporal limitations and set in the large and noble frame of the Divine purpose and plan. Life to him was worth living, because it was lived in fellowship with God. He believed and practised the doctrine that "man's chief end is to glorify God and enjoy Him forever."

The directness and intensity of this immediate communion with God was facilitated for him by the absence of physical science and historical criticism. The passage from the narrow confines of his little practical world to the throne of God in Heaven was easy because the great intervening reigons, which to our minds are occupied by philosophy, science, history, and criticism, presented to him the pure transparency of almost empty space. That these clouds should have come between our eyes and the purely transcendent God of the Puritans is neither our misfortune nor our fault. It was a necessary concomitant of the development of human intelligence. That the change should bring with it temporary loss of religious fervor and of theological certitude was also inevitable. That these losses should dampen enthusiasm and diminish interest in life might have been anticipated, even if one had not seen it written in the desolation and decay that has stricken the domestic and social life of so many once happy homes and hopeful villages.

It is futile for us to lament these clouds, as though they were a screen devised by the Evil One to hide God from our eyes; it is useless to try to find the Puritan's transcendent God once more behind them. They are too thick for unreasoning faith to penetrate. Our task must be to find our God, not behind these clouds on the throne of some Heaven remote from earth in space and time, but to find Him in that beneficent order which science increasingly reveals and through that benevolent purpose which history progressively unfolds. As with all sudden access of knowledge, the opening of New England to the influence of the great world without has brought with it for the

time a spiritual fall. When, however, the fruit of this new knowledge shall be fully assimilated, when the complexity of our new industrial, social, and political conditions is fully mastered, we may hope to see restored the old intensity of faith and enthusiasm of life which made great and glorious the souls of Pilgrim and Puritan; yet without that narrowness of mind and limitation of view which rendered many of their acts ignoble and repulsive.

In the conflict of ideas, in the struggles of institutions for existence, the fittest will survive. If the native New Englander loses his intense interest in local affairs because they are no longer so simple as they used to be; if he shirks hard work in farm and factory for soft places in offices and stores; if he seeks polish rather than power in education; if he loses the strictness of Puritan morality without gaining the inspiration of altruistic ethics; if he wraps his religious aspirations in the napkin of individual salvation or hides them within the confines of sectarian exclusiveness, then the descendants of the Puritans and their institutions with them will perish from the land.

If, however, he takes up the problems of town, city, and State, not less but more eagerly because they are members of a mighty nation; if he is willing to do his share of the rough, hard work; if he educates himself for service rather than for show; if he puts the enthusiasm of humanity behind his morality and sets the ideal of social service before his religion, then it will matter little whether the lineal descendants of the Puritans constitute a majority or a minority of the population. The institutions of the Puritan thus apprehended, invigorated, and sustained will survive by virtue of their intrinsic fitness, and will endure as a perpetual blessing to whatever races of men may hereafter dwell upon these shores.

WM. DEWITT HYDE.

MR. ATKINSON'S REPLY.

PRESIDENT HYDE, perhaps unconsciously to himself, regards the transformation of New England, especially during the last fifty years, as a process of decadence. It happens that my own experience in active business covers this exact period, and I may almost claim that my habit of observation and my attempts to comprehend and coördinate the great forces which underlie all the work of life cover nearly an equal period. If I am right in imputing a doubt of the progress of

New England and a fear of her decadence to President Hyde, then I differ with him gravely.

I think that almost all the changes that have occurred during the past fifty years have been in the direction of improvement and progress, both material and mental, although there have been some counteracting forces to which I may refer.

Dealing first with material progress, the tendencies developed by the application of science and invention to useful work are to alleviate the arduous character of the work of getting a living, to do away with noxious conditions, to increase the product and to render the processes of distribution more equitable, and year by year, or decade by decade, to render it more the rule than the exception that the workmen secure to their own use an increasing share of an increasing product. As a result the average duration of life is increasing. I make a broad distinction between the workman and the mere laborer who can apply only muscular effort to what he does. I wish that we could revive the use of the old English word craftsman; there are craftsmen, workmen, and laborers, each class occupying a difierent plane. The progress of the workman and the craftsman cannot occur unless it is accompanied by the development of mental intelligence and manual aptitude. As these factors in production assume greater and greater importance in comparison to mere labor or physical exertion, the old conception that labor is a curse that has been imposed upon man in consequence of his sin assumes an aspect of grotesque absurdity. Mankind has risen through the necessity for work to a constantly higher and higher plane. The fall of Adam is a Hebrew myth, no longer degrading man in his own estimation. The conditions of the Garden of Eden may be witnessed in the South Sea Islands, where no work is required of the inhabitants. The pagan conception that "the world, the flesh, and the devil" are of necessity synonymous terms may be relegated to the creed that no longer represents belief or to the pulpit of which the occupants are still bound by dogmas which have ceased to represent any living facts or principles of life. I am much inclined to attribute the breaking away from the bonds of the old church and parish, and also "the extreme subjectivity and individualism which characterize the religious thought and life of to-day," as President Hyde puts it, to the growth of a higher type of religion than any that has preceded it—a religion in which the imagination may be cultivated and developed to the end that healthy minds may dwell in healthy bodies so long as the flesh is occupied, so that the world may assume its true aspect

as a place in which manhood and womanhood may be developed. I frequently quote Dr. William Everett, who put into terse Latin the idea that the body must be well supported and nourished if the spirit is to be true to itself: "*Non est animus cui non est corpus*" (There can be no soul unless the body eats).

I think that we may also send an impossible devil down to an inaccessible hell, lest we should revert to the paganism of the Puritans. What could be more grotesque and what could give a more complete proof of the lack of mental development in the days of the Puritans than the fact that Parson Wigglesworth's "Day of Doom" passed through a great number of editions in a day when books were rare and money very scarce? In this doggerel rhyme the perverted imagination of the excellent and revered doctor brings some poor little babies who had not been baptized up before the Judge of all the world; they were therefore ordered to be sent to endless punishment; but the judgment tempered with mercy which the Puritan puts into the mouth of Jesus Christ assigned these little children whom He had asked to come unto Him to the easiest room in hell.

What wonder that the great body of the people, as their intelligence and aptitude have been developed by their daily occupations, gradually break away from churches from which the dust and ashes of the past have not yet been swept out? They must do this in order to find room for the play of progressive religion. If individualism is *not* the objective point of all religious development, then indeed would life be hopeless and we might cry out in despair, "Let us eat and drink, for to-morrow we die!"

May we not assume that the very object of life is the development of this individual, this *Ego?* We are all occupied in our personal work and we try to combine only in order to overcome the evil tendency in the struggle by which not only individual but national manhood is developed. We must take a long survey of the past before we can begin to comprehend all the progressive conditions of the present and the promise of the future. Sir Henry Maine remarks in his address upon Ancient Law:

> "No trustworthy record can be read without perceiving that the habit of mind which induces us to make good a promise is as yet imperfectly developed, and that acts of flagrant perfidy are often mentioned without blame and sometimes described with approbation. In the Homeric literature the deceitful cunning of Ulysses appears as a virtue of the same rank as the prudence of Nestor, the constancy of Hector, and the gallantry of Achilles."

Referring to great frauds, he says:

"But the very character of these frauds shows clearly that before they became possible, the moral obligation of which they are the breach must have been more than proportionately developed. It is the confidence reposed in and deserved by the many which affords facilities for the bad faith of the few."

I will give a single instance of the trust which may be reposed in the business community of New England. In 1872 Boston was devastated by a great fire in which the Freeman's Bank building was destroyed. I quote an account of what occurred, which the son of the president of the bank has given me:

"On the morning of the 11th or 12th of November, 1872, as soon as it was safe to do so, I stood beside my honored father, John H. Rogers, then the president of the Freeman's National Bank, on the ruins of that bank, and as we looked upon the vault containing the entire treasure of the bank we saw that the safe was perforated and a small volume of smoke was curling over the safe, coming *through* the hole that had been made by the safe having fallen upon a granite pillar. As my father saw it and leaned upon me, I believe I do not exaggerate when I say to you that I saw him grow old in that minute. Next to his church and his family he loved the Freeman's Bank, and he believed, as I believed at the time, that we had seen the evidence which meant ruin to the bank. I sent him home and got an engineer of the Fire Department to bring an engine around as soon as he could to cool off the safe, but all the books and securities were destroyed. After the bank began anew, about the 11th or 12th or 13th of November, it resumed business in the store of Haley, Morse & Boyden, opposite the Globe Theatre. Notices were sent out from there to every person who was known to do business with the bank. In the hands of the printer there was, I believe, a list of depositors, and also there was a book which one of the clerks had been permitted to take home with him on Saturday night, November 9, to find some error of a few cents in a column of figures that he had been unable to discover during the day. It was with this list of the depositors of the bank from the printer and with this single book that the Freeman's National Bank began business. As soon as the notices were sent to the merchants of Boston who were doing business with our bank that the bank needed a duplication of notes that had been discounted, etc., many a man came in at that time and said to the president and the directors, 'The Freeman's National Bank must be restored. This schedule that I hand you contains the notes that I had discounted. I will cheerfully duplicate them, and I will pay them if I can, though God only knows if I shall be able to pay, for my store is in ruins and all I have saved is my books.'"

The obligations due to that bank amounted to $1,400,000. On a final settlement the ultimate loss was $6,000, and even a part of that could be attributed to the fact that many of the creditors lost their books in the same fire and could not themselves tell how much or whom they owed.

I will give another proof. I myself administer the affairs of a strictly mutual insurance company carrying risks to the amount of $100,000,000, which constitute a part of an insurance of over $600,000,000. In the next twelve months textile fabrics, paper, machinery, cordage, and metal work will be turned out from these factories and workshops to the value of over $1,000,000,000. These goods will be sold to Jew and Gentile, native and foreigner alike, all over our broad land. The charges will be made on the books of account and will be liquidated by checks, notes, and bills of exchange which rest upon mutual trust for their liquidation. So sure will be the payment of every obligation that it would not be worth the payment of twenty-five cents on each one hundred dollars by the vendors to secure a guarantee that every bill will be met at its maturity. It would make little difference if all laws for the collection of debt were repealed, because we rest on law only with respect to the hundredth man; the other ninety and nine are a law unto themselves.

All that we need to look after in these days is to keep the dollar itself honest in which these payments are to be made. The worst influence which a bad man can exert who suborns courts, wrecks railways, and shears the lambs who bring in their fleeces to him is in the distrust that he creates in regard to the integrity of other men. It is the exception that is conspicuous, and one may write the epitaph of such a man without naming him, even as Pelatiah Webster wrote the epitaph on the death of the Continental currency (I quote from memory): "Of all the mighty monsters born of war, it died least lamented. It killed more men, destroyed more property, and impaired the cause of liberty in greater measure than all the arts and armies of the enemy combined have yet accomplished." Compare these conditions of the Revolution with the more recent instances, and I think that you will find evidence of marked political progress. We have surmounted the evil effects of a depreciated paper currency which was issued during the Civil War for the purpose of collecting a forced loan. We stand first among nations in history of those who ever redeemed a legal-tender note in true money according to the terms of the promise. I do not wish to throw discredit upon our patriot fathers, but when I read the financial history of the Revolution and the devices which were sought to avoid the burdens of the war, I find every evidence of both moral and material progress. Since that period one only wonders at the success that was attained under such conditions. The historian Greene writes:

"The idea that money derived its value from acts of the Government seemed to have taken deep hold upon men's minds, and their policy was in perfect harmony with their belief. Speculation ran riot. Every form of wastefulness and extravagance prevailed in town and country, nowhere more than in Philadelphia under the very eyes of Congress: luxury of dress, luxury of equipage, luxury of the table. We are told of one entertainment at which eight hundred pounds were spent for pastry. As I read the private letters of those days I sometimes feel as a man might feel if permitted to look down upon a foundering ship whose crew were preparing for death by breaking open the steward's room and drinking themselves to madness."

I have referred to Pelatiah Webster, the patriot merchant, who describes the condition of public morals in the most convincing manner; he urges taxation at the beginning rather than a resort to paper-money devices for shifting the burden of the war. In 1779 and 1780, the darkest period of the war, he wrote as follows:

"1779—Freedom of trade or unrestricted liberty of the subject to hold or dispose of his property as he pleases is absolutely necessary to the prosperity of every community and to the happiness of all individuals who compose it.

"The riches of a nation do not consist in the abundance of money, but in the number of people, in supplies and resources, in the necessaries and conveniences of life, in good laws, good public officers, in virtuous citizens, in strength and concord, in wisdom, in justice, in wise counsels and manly force.

"1780—We have provisions and stores enough. We have men enough for every purpose. Our houses, lands, and stock on the lands are little diminished and in many places increased since the war began; yet our credit runs so low that it is with great difficulty sufficient supplies can be obtained.

"Our finances have, for five years past, been under the management of fifty men of the best abilities and most spotless integrity that could be elected out of thirteen States; yet they are in a ruined condition."

At that period the population of Massachusetts was mostly of English blood; none of those whom we now call foreigners, or few of foreign birth or origin outside of England, were here. In 1861 none rallied to the defence of the Union more freely than those who were of foreign birth and origin. In the matter of finance the Massachusetts of 1861 kept faith with all her creditors and paid every obligation in gold or its equivalent.

Boston is now an Irish and Catholic city in respect to the majority in power and influence of those who dwell therein, but Boston has set an example by establishing a free city library, and is now completing a noble building, itself a work of art, which will cost close upon two million dollars, to hold its books.

Again, may we not claim, to some extent at least, that Chicago is a child of New England parentage? The northern part of Illinois

adopted the New England town-meeting, the southern part the county system of local self-government. The town system has triumphed. What is Chicago doing now? Resting content with her great exhibition? By no means. She realizes, perhaps unconsciously, that within a single generation every machine that will be exhibited, every tool used, and every process worked there will have been displaced and made almost without value by new applications of science and invention yet to come, and therefore she is signalizing the year by the establishment of a great university. Is not New England still the centre from which the higher education of men and women emanates?

There are two sides to the picture of the Puritan and Pilgrim era. On the one side, the familiar aspect of which we may all be so rightly proud, the dominating power and force which enabled those men to establish the very foundations of personal liberty on which our institutions all rest, although they hardly permitted personal liberty to themselves. They established the common schools, and I think that they brought that conception from Holland rather than from England, together with many other fundamental ideas of right upon which our institutions are founded. Let us not attribute too much merit or advantage to the maintenance of the pure English blood. Witness the conditions of the great struggle in England between King and Commons in the very era in which Pilgrims and Puritans alike were coming to our shores; take note of the sacking and burning, the murder and rapine, that converted every Catholic and Protestant, Cavalier and Puritan alike, into a semblance of the devils whom both sought to exorcise from our mother land. Then take note of the quiet work which Huguenot and Fleming were doing when they laid the very foundation of modern manufacturing industry in England, while the Dutch had long before revolutionized the agricultural methods of the people.

I recognize all this, which time will not permit me to discuss in detail; but on the other side we find in the records of the courts and parishes conclusive evidence of widely prevailing drunkenness, of fraud, and even of immorality that would not now be tolerated in any community in the way in which it prevailed at that time. I am most profoundly convinced that pauperism and vice are not relatively as prevalent now as they were in the past in many periods of our history, but they have become more conspicuous; that is the first step in the progress toward a removal of the causes. In place of dealing with the sinner and condemning him, we are now doing all that we can to

remove the causes of his misdoing and to give him opportunity to rise to a higher plane.

The work that is being done in the attempt to remove the obstructions from the way and to give opportunity to those whom we must call, for the want of a better term, "the poor," may be attributed to the growth of the true religion, a religion which is not separated from life, but is of a type in which religion and life march together; it is a kind of religion about which people do not say much and which is not developed either in prayer-meetings or in experience-meetings. My observation, both here and in England, has led me to the conclusion that perhaps those who say the least about their religion do the most good in the world. The men whose creed is the divinity of humanity and the humanity of the divinity that shapes our ends are perfectly content to forego criticism or interference with the Catholics, who find in their ritual, and yet more in the grand music of the Catholic churches, an appeal to the imagination which is lacking in the life of the great body of those who attend these services and which is almost wholly wanting in the Protestant congregational service. They find no difficulty in working with the ritualist or the priest of the Church of England, realizing the fact that to many otherwise very worldly people in what is called good society this form of worship may be the only one that would arouse the imagination. They take no exception to the prayer-meeting or even to the experience-meeting of the Methodist and the Baptist, and they may even tolerate the somewhat ecstatic performances of the Salvation Army, if that is the only way in which the imagination of an otherwise prosaic people can be aroused. Therefore they welcome almost any departure from the rigidity of the Puritan that will open the way to a freer and better type of order in the religious community and to a faith in which the imagination is the prime factor, the faith which is the substance of things hoped for, the evidence of things not seen.

Enough has been said of this branch of the subject. President Hyde attributes a somewhat baneful influence to the changes which have unquestionably occurred in the form of New England society. He says:

"Poor land and rich water, emigration to and competition from the West, false pride and social ambition on the part of the natives, have combined to make manufacturing the leading industry, and then to turn it over, together with domestic service and manual labor of all kinds, to foreigners. The natives in

the towns and cities as a rule are either living on interest and rent, or are tradesmen, commercial travellers, clerks, book-keepers, agents, teachers, and professional men."

I take exception to that statement in form and substance. In the Colonial period the occupations of the people were not, I think, so exclusively agricultural as would be indicated by the phrase used by President Hyde—"Agriculture was the chief and almost universal industry." It was a branch of industry in which nearly all were compelled to share in order to assure a suitable production of food, but commerce and the fisheries were the chief sources of wealth and gave occupation during the whole of the year to many and during a part of the year to great numbers of the people, while the mechanic arts, then conducted mainly by purely manual processes, must have been the principal occupation of a very considerable portion of the population.

Society differentiates in ratio to progress in the application of invention to the different branches of industry; the division of labor which ensues and the sorting into distinctive occupations is an element of progress and not of decadence. The real foundation of the discontent which led to the Revolution was the effort of Great Britain, beginning in 1750, to prevent diversity of occupation, to attack the growth of manufactures and the mechanic arts, and the final cause before the attempt to tax without representation was the effort to enforce the navigation laws, which, having been almost inoperative from the time that they had been passed at Cromwell's instance for nearly a century down to 1760, did not prevent the establishment of an almost world-wide commerce by the people of New England. Now, to any one who views the commerce of the world as an opportunity for broadening the life of the individual it will be very plain that one of the very greatest changes in the transformation of New England was effected by the establishment of the system of high protection, which by practically destroying important commercial enterprises forced the people of New England prematurely into the factory system. Domestic manufactures had become well established long before the first highly protective tariff, that of 1824, had been enacted. Webster bears testimony to this fact; so does Hamilton in his celebrated report on manufactures of 1791. In 1820 Webster made a remarkable forecast of the transformation of New England through the artificial and forced establishment of the factory system. In the report of a wonderful speech by Webster in Faneuil Hall in 1820, which does not appear in his works edited by himself, there occurs this prediction:

"To leave men to their own discretion, to conduct their concerns by their own skill and prudence, and to employ their capital and their labor in such occupations as they themselves found the most expedient, has been found the wisest as it is the simplest course of political legislation. . . . For his part, he believed that, however divided, the principle of leaving such things very much to their own course in a country like ours was the only true policy, and that we could no more improve the order and habit and composition of society by an artificial balancing of trades and occupations than we could improve the natural atmosphere by means of the condensers and rarefiers of the chemists. . . . Dealing with commerce, he said the county of Essex alone possessed more tons of shipping before this Government was framed than belonged to the whole of England in the reign of Elizabeth at the time of the repelling by her fleets of the Spanish invasion. . . . If the capital now employed in commerce were also to be put into manufactures it would, in the end, he should think, get the ascendency. . . . If the system be established and adhered to—that is, the over-development of the factory system—the effects will not be tardy in their arrival. Two generations, in his opinion, would change the whole face of New England society."

It is just two generations since that prediction was made, and one of the chief objections made by President Hyde to the present form of New England society is the tendency of the foreign element in the manufacturing industry and of the native element to leave this kind of work to the foreigners. I do not think that the evil has been as great as Webster predicted. I have myself been in charge of large factories; I have witnessed the passage from the factories of the farmers' daughters of New England to higher and less arduous and better kinds of occupation at much greater wages. I have seen the English, the Irish, and the Germans succeed the native Americans, pass through the mills, save their earnings, and they are now buying up the deserted farms of New England; a process of transformation which for the time being has the appearance of decadence, but which is really an element of progress. Lastly, I have witnessed the filling up of the mills with the French-Canadians, and from my own experience in dealing with them I think that they are more versatile, possess more taste, and can be guided to a truer measure of economy in living than almost any other race that has come among us. They will be assimilated. The common school is the solvent of race, creed, religion, and condition. Our education may have been, as President Hyde says, "more ornamental than practical," but is it so to-day? Are we not busily engaged in removing from our schools all that is extraneous, and have we not brought into the common-school course a system of manual training and a practical method of object-teaching such as never obtained before?

I do not believe that while humanity has been emancipated from

the Puritanical fear of God it has *not* become grounded in love to man; I do *not* concur in the judgment that religion has lost its grasp on the community as a whole. I firmly believe that we may find evidence of progress in morality and religion in the fact that men have done talking much about saving their own souls and are bending all their energy to the development of healthy bodies and sound minds in order that we may dwell in comfort and welfare upon this earth. If this is subjectivity and individualism, let us have all that we can get of it.

I admit that our school instruction is not yet what it should be, but education does not consist wholly in school instruction. That may be good or bad, and yet the discipline of the school itself, the order and the method, the habit of working together, the subjection of the ignorant to methods of work and to a system of training which is developed even in the schools where mere text-book instruction is the rule and object-teaching the exception, tend to educate in the truest sense the children who gather therein, of whatever race or nation they may be. There are two large school-houses at the north end of Boston in which fourteen hundred children are taught. The last time that I made inquiry, more than one thousand of those children were Italians or Jews. These school-houses are in the quarter where the sweaters' dens are found close to the school-house, and the children themselves come in part from the slums of the city. They are dirty, yet they are intelligent and progressive. They are being helped to pass out of the adverse condition in which their parents live. Much complaint has been made of the very low wages which their parents earn and of the hard conditions of their lives; but when a run was made upon one of our largest savings banks, not many months ago, the run came from the very people who live in this quarter, whose children attend those schools. The run was stopped and the scare was allayed by the Roman Catholic bishop and the Italian priest.

Again, within the last few years, since a forced emigration of the Jews began, four thousand poor Jews have landed in Boston. In New York the number must have been vastly greater, and doubtless the excellent Hebrew societies have done the same thing in New York that they did in Boston. Such provision has been made by them for care for their fellows that each one has been met at the wharf, taken to a home, and not one has come upon the pauper institutions of the city. When the Christian deals with poverty as wisely as the Jew we may hear less of the crime that is generated by want and destitution.

I say that with the development of intelligence the school has become stronger than the priest or the parson; individualism *has* taken the place of authority, and true progress in religion and life *has* ensued. The true preacher, the true minister of the gospel, works with the school. I believe that our system *has* solved the problem. In the matter of race, I am inclined to concur with the late James Russell Lowell in what I have been informed was his judgment of men, that in the combination of races that is going on in this country there is a tendency toward a higher type of a homogeneous people. A finer type of man will be developed especially among those in whose blood is a strain of the Hebrew race. President Hyde remarks that "the church in each town must measure its success by its service, by reforms in local politics, by improvements in charity and sanitation, by support of libraries and schools, by the sweetening of family life and the refinement of social intercourse, by the respect it inspires for honest toil and the standard of justice it maintains." He says: "Yet all this must be done not as the Puritan tried to do it, by law, under constraint through the State, but by love with freedom through society." Why deal with this as in the future? Is it not true that while churches and sects are wrangling over heresy and dogma, society has been moved to the conception of the very central precept of Christianity, "Thou shalt *serve* thy neighbor as thyself" (the true rendering of the Golden Rule), has been moving on those very lines for years, and is now so far in advance of the Church as to make the effort a hard one for its members to get even with society? Service is the law by which commerce lives and moves and has its being.

With all the principles stated by President Hyde one must most heartily agree, but when he adds that "the first of our many *sects* that shall rise to this conception of its duty will prove its right to be the successor of the Puritan," I reply that the Puritan can have no successor: he is a type of a by-gone age. No sect *can* rise to that conception; the very word "sect" forbids. It indicates a cutting off of the few from the great body of busy men. President Hyde's is, in fact, the conception of the Church Universal, in which there will be no sects, but in which every individual soul, enlightened by that spark of inspiration which comes from the Almighty, will join with all its brethren, of whatever sect and of every type, whether Buddhist, Hebrew, or Christian, in promoting the progress of humanity.

EDWARD ATKINSON.

WRITERS IN THE MARCH FORUM.

CAPTAIN A. T. MAHAN (*Hawaii and Our Future Sea-Power*), of the United States Navy, is President of the Naval War College at Newport, R. I., and is the author of two important historical works, "The Influence of Sea-Power Upon History" (1890) and "The Influence of Sea-Power Upon the French Revolution and Empire: 1797–1812" (1892).

MR. ERNEST LAMBERT (*Panama: The Story of a Colossal Bubble*) was born in 1863. He has been connected with the Montreal "Gazette," the Chicago "Times," and the New York "World"; has edited at Panama the "Star and Herald," and he subsequently acted as private secretary to United States Minister Whitelaw Reid, in Paris. He has since been staff correspondent and an editorial writer of the "Tribune" and editor of the "Tribune Almanac." His letters in 1891 from the South were republished in a volume, under the title "Southern Sketches."

MR. GEORGE WEBB MEDLEY (*A New Commercial Era for the United States*), born in 1826, has been for several years active in English politics. He has interests in both American and English railway companies, is an ardent free-trader and a conspicuous member of the Cobden Club. He has made many contributions to the literature of social and political economy, and he is a member of the leading economic associations in England.

DR. J. M. RICE (*The Public-School System of Philadelphia*), born in Philadelphia in 1857, was graduated at the New York College of Physicians and Surgeons in 1881. He took a course of psychology and pedagogy at the universities of Jena and Leipsic, after which he studied the school work of various European countries. Dr. Rice, in the service of THE FORUM, has visited the public schools in thirty-six cities, spending every school-hour in school-rooms, making the investigations upon which he has based these articles.

THE writer (*The Science of Municipal Corruption*) of this article presents facts which he knows personally to be authentic. His name, for obvious reasons, is omitted.

DR. ALLAN MCLANE HAMILTON (*American Winter-Resorts*), born in Brooklyn in 1848, was graduated at the New York College of Physicians and Surgeons in 1870, and since that time he has practised medicine in New York City and has won eminence, chiefly for his treatment of nervous diseases. He was one of the chief witnesses for the Government in the trial of President Garfield's assassin. He edited for a time "The American Psychological Journal," and he has written a number of medical works. He is a fellow of the New York Academy of Medicine and a member of various medical societies.

MR. JAMES D. HAGUE (*The Cost of Silver and the Profits of Mining*), born in Boston in 1836, was educated at the Lawrence Scientific School of Harvard University, at the University of Göttingen, and the Royal School of

Mines at Freiberg, Saxony. After returning to America he devoted himself to mining engineering and to geological work. In 1867 he was made first-assistant geologist in the United States geological exploration of the fortieth parallel, and he served in this capacity for three years. In 1871 he took up his residence in San Francisco, where for several years he acted as expert mining-engineer. Since 1879 he has lived in New York, and he is now associated with the North Star Mining Company.

MISS CLARE DE GRAFFENRIED (*The Condition of Wage-Earning Women*) was born and educated in Georgia. After teaching for a time in a private school in Washington, she was appointed special agent of the United States Department of Labor. She has investigated social and economic conditions over a wide territory and was lately sent to Belgium to report on industrial education. Her monographs on "Child Labor" and "Women Wage-Earners" won two successive first prizes offered by the American Economic Association.

MR. MOSES BRÜHL (*An Appeal to Retire Government Paper Money*), of New York, formerly a manufacturing jeweller and importer, has since 1888 been retired from business and has devoted much of his time to the study of financial subjects.

MR. SILAS G. PRATT (*A Plan and a Plea for American Opera*) is the composer of several operas and of the cantata that was specially written for the recent Columbian celebration in New York. He has for many years been active in behalf of the interests of music in this country.

DR. LEWIS A. STIMSON (*Short Studies of Great Men: Pasteur*) was born in New Jersey in 1844 and was graduated from Yale College in 1863. He then entered the army and served until the close of the Civil War, retiring with the rank of captain. After some years spent in travel and study abroad, he began the practice of his profession in New York in 1874. He is attending surgeon of the New York Hospital, professor of surgery in the University of the City of New York, and corresponding member of the *Société de Chirurgie*, of Paris. He has published several medical works and a translation of Paul Lacombe's "Growth of the French People: a Short Study in French History."

PRESIDENT WILLIAM DEWITT HYDE (*The Transformation of New England: Is it Decay or Development?*), born in Winchendon, Mass., in 1858, was graduated at Harvard in 1879 and at the Andover Theological Seminary in 1881. In 1885 he was elected president and professor of moral philosophy at Bowdoin College. The college has prospered greatly under his ministrations, and he has won a high reputation as an educator. He has made a special study of social economics and contributed occasional articles to the leading reviews.

MR. EDWARD ATKINSON (*The Transformation of New England: Is it Decay or Development?*) was born in Brookline, Mass., in 1827. He is president of the Boston Manufacturers' Mutual Fire Insurance Company, which wrought a revolution in the construction and security of manufacturing buildings, and he is the inventor of the "Aladdin Oven." He has for many years been a frequent contributor, chiefly in pamphlets and magazine and newspaper articles, to the current literature of social and political economy. His works include: "The Collection of Revenue," "The Railroads of the United States," "The Railway and the Farmer," and "The Distribution of Profits."